

## **TOKAI-MURA ACCIDENT, JAPAN THIRD PARTY LIABILITY AND COMPENSATION ASPECTS\***

### **Summary of events**

#### *The accident*

On 30 September 1999, at 10.35, Japan's first criticality accident occurred in a conversion test building of a nuclear fuel fabrication plant in Tokai-mura, in the Ibaraki Prefecture. This plant is operated by JCO, a wholly-owned subsidiary of Sumitomo Metal Mining Co. (SMM) of Tokyo. A state of criticality continued on and off for approximately 20 hours following the initial criticality incident. The neutron dose rate had decreased below the limit of detection by approximately 06.30 on 1 October 1999.

This irradiation accident was rated Level 4 on the International Nuclear Event Scale (INES), indicating an event without significant off-site risk. The three workers directly involved in the accident were exposed to high levels of radiation and accordingly their health was adversely affected.<sup>1</sup> Twenty-four JCO personnel engaged in operations to stop criticality were subject to planned exposure. One hundred and forty-five JCO employees, 60 government officials and 207 local residents also received radiation doses of varying levels.

#### *Authorities' response*

##### *Emergency measures (chronological order)*

The accident was first notified to the Science and Technology Agency (STA) on 30 September 1999 at 11.19.

At 12.15, the local authorities in Tokai-mura established an Emergency Response Headquarters and the Mayor of Tokai-mura issued a recommendation to residents of his locality to shelter indoors.

At 14.30, the STA set up its Countermeasure Headquarters. However, in compliance with the 1961 Basic Law for Countermeasures against Disaster,<sup>2</sup> the Government Accident Countermeasure

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\* This study was prepared by the Secretariat of the OECD Nuclear Energy Agency in collaboration with the Japanese authorities.

1. Two of them subsequently died on 21 December 1999 and 27 April 2000 respectively.

2. This Law, which deals principally with natural disasters, was not deemed appropriate for the countermeasures necessary for this criticality accident: pursuant to the 1961 Law, local governments

Headquarters headed by the Minister for Science and Technology were established at 15.00, and the two Headquarters merged.

At 15.00, the Mayor of Tokai-mura issued a recommendation to residents living within a 350 metre radius from the site of the accident to evacuate the area.<sup>3</sup>

At 15.30, the STA set up Local Countermeasure Headquarters in the STA's Safety Inspection Office at the Tokai facility in order to carry out on-site investigations.

A Government Task Force for the Accident headed by the Prime Minister was established at 16.00.

At 22.30, the Governor of Ibaraki Prefecture issued a recommendation to the 310 000 residents living within a 10 km radius from the plant to shelter indoors.<sup>4</sup>

On 1 October 1999, the Governor of Ibaraki Prefecture requested the closure of schools within a 10 km radius from the site and the suspension of harvesting of crops and vegetables.<sup>5</sup>

On 3 October 1999, the local government took measures to provide free medical check-ups for people living within a 350 metre radius of the accident. In fact, by 12 October 1999, examinations to detect radioactive contamination had been conducted for 74 633 residents.

Pursuant to the Task Force Plan issued by the Japanese Government on 4 October 1999 to deal with the consequences of the accident, an Investigation Committee for the Critical Accident at the Uranium Processing Plant was established by the Nuclear Safety Commission on 7 October 1999. This Committee issued its "Urgent Recommendations – Interim Report" on 5 November 1999.<sup>6</sup> This Interim Report described the social and economic effects of the accident as follows:

*"With evacuation of approximately 50 households within 350 metres and the recommendation to remain indoors for approximately 300 000 people living within a 10 km radius, transportation facilities were cancelled and schools and other public facilities were temporarily closed as were private companies. The effects of the accident were very large both socially and economically. Residents living near the site were not only inconvenienced due to the evacuation and the recommendation to stay indoors, but they also were subjected to the mental and physical effects caused by rumours. At the same time, sufficient measures including psychological counselling are necessary. Following the accident, there are many adverse effects due to rumours from misunderstanding".*

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are directly responsible for the disaster prevention system of nuclear facilities, upon the advice of the government. In order to strengthen the emergency response regime, a Special Law on Emergency Preparedness for Nuclear Disaster was enacted in December 1999 in order to clarify the responsibilities of the government, local authorities and operators in nuclear emergencies.

3. One hundred and sixty-one persons were concerned by this recommendation, which was lifted at 18.30 on 2 October 1999.
4. This recommendation was lifted at 16.30 on 1 October 1999.
5. The recommendation suspending harvesting was lifted at 18.30 on 2 October 1999.
6. The final report was issued by the Investigation Committee on 24 December 1999.

### *Measures concerning compensation claims*

On 4 October 1999, JCO opened up a contact point to facilitate the consultation of victims who were encouraged to submit an application form with detailed information on the damage suffered.

Pursuant to Section 18 of the Law on Compensation for Nuclear Damage,<sup>7</sup> a Government Ordinance was issued on 22 October 1999 to establish a Dispute Reconciliation Committee for Nuclear Damage Compensation. Members of this Committee, which was set up at the STA, included lawyers, medical experts and nuclear engineering experts. Also on 22 October 1999, the STA established the Nuclear Damage Investigation Study Group to analyse the accident, damage and case studies, and to establish criteria to determine which nuclear damage should be compensated. This Study Group consisted of legal experts, university professors, nuclear engineering and radiation experts etc. with knowledge of, or engaged in practices related to nuclear damage compensation regimes, third party liability or insurance, in order to facilitate prompt and efficient negotiations between the parties. According to press reports, the nuclear insurance pool was to consult with the Study Group in order to assess compensation amounts.

By 30 September 2000, 7 025 claims had been filed by citizens, businesses and industrial organisations. Just before the end of 1999, the prefectural government and other local authorities offered mediation between JCO and victims for an early settlement. The following agreement was reached between JCO and the local authorities: JCO committed itself to pay approximately half of the claimed amounts to victims as a form of provisional payment before the end of 1999, to settle up as early as possible in 2000, and not to apply any predefined restrictions in terms of limitation periods for submission of claims and geographical scope. JCO's provisional payments amounted to 5.4 billion Japanese yen (JPY) by the end of December 1999 and a Special Consultation Centre was set up in the Ibaraki Prefecture Office from 31 January to 25 February 2000 in order to pursue negotiations with victims on the claims introduced. Over 98% of these claims were settled by 30 September 2000.

## **Liability and Compensation Issues: Implementation**

### *Damage subject to compensation*

On 26 May 2000, the STA Nuclear Damage Investigation Study Group finalised its report establishing guidelines to determine what damage caused by the Tokai-mura accident would be qualified as “nuclear damage” under Section 2(2) of the Compensation Law,<sup>8</sup> and thus should be compensated. Its report is based on domestic judicial precedents, examples in other countries and information obtained from on-site investigations. It provided an indication of the extent to which a causal relationship must be proven, and it established guidelines on potential compensation with regard to eight categories of damage as follows:

- *Personal injuries*: people suffering from personal injuries are eligible to receive compensation if they can prove that their injuries are radiation injuries caused by exposure to radiation or radioactive nuclides released as a result of the accident.

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7. See Annex I related to legislation governing the compensation of nuclear damage.

8. *Idem*.

- *Medical examination expenses (people)*: compensation will be given to anyone who was in Ibaraki Prefecture at any time during the period from the occurrence of the accident (10.35 on 30 September 1999) to the lifting of the evacuation recommendation (18.30 on 2 October 1999), and who incurred expenses in respect of a medical examination (before 30 November 1999) for the purpose of determining whether any physical injury had resulted from the accident.
- *Evacuation expenses*: transportation, hotel and other incidental expenses which were paid until the evacuation recommendation and recommendation to stay indoors were lifted are eligible for compensation.
- *Examination expenses (property)*: if property was in Ibaraki Prefecture at the time the accident occurred, expenses incurred in respect of examination of the said property (before 30 November 1999) can be recognised as damage.
- *Contaminated property*: in the case of movable property: if the property was in Ibaraki Prefecture at the time the accident occurred and if the value of the property has depreciated as a result of the accident, the portion of the value lost or reduced can be recognised as damage; in the case of real estate: if there was no firm intention to sell such property, it is not subject to compensation; if however there were cancellations of real estate sale agreements, refusal of loans with real estate as security or a reduction in planned sale prices, or if there was reduction of rent or cancellation of lease agreements after the accident, if the claimant proves the rationality of the claim, such claims may be subject to compensation.
- *Lost income*: anyone whose residence or place of work is in the area subject to the recommendations, and who was unable to work as a result of the administrative action, is eligible for compensation in respect of his/her lost or reduced income.
- *Business damage (both due to physical effects and to rumour)*: to be qualified as damage, there must be a consequential relationship between the accident and the economic loss; to determine causality, the time at which such loss or damage was caused, and the distance from the accident site are the most important factors: economic loss suffered between the time of the accident and 30 November 1999, within a 10 km radius of the accident site, and caused by loss of custom which is estimated to be reasonable given the circumstances of the accident, leading to an actual decrease in income, is considered to satisfy the causality criteria and is deemed eligible for compensation.
- *Mental suffering*: mental anguish alone, without any personal injury, is not recognised as damage unless the claimants can irrefutably prove a causal relationship and the proportionality of the amount of compensation sought.

The Japan Atomic Energy Insurance Pool (43 non-life insurance companies) determined its own claims handling standards for damage resulting from the accident. Based on the discussions of the Study Group, such standards are in line with the Study Group guidelines.

### ***Compensation amounts awarded***

By 30 September 2000, 7 025 claims had been filed. According to the STA, almost all compensation in respect of the accident had been awarded by 30 September 2000: 98% of the claims

were settled for a total amount of JPY 12.73 billion. Since it was clear that the amount of compensation JCO could provide by itself<sup>9</sup> was insufficient, SMM provided assistance in respect of the payment of the remainder. The payment made to JCO by the Japan Atomic Energy Insurance Pool was limited to JPY 1 billion, namely the amount insured by JCO.

The majority of claims concerned economic loss caused by consumers' behaviour based on rumour.

The following groups of persons were affected by the accident and presented claims against JCO:

#### *Workers*

Under the Workers' Accident Compensation Insurance System,<sup>10</sup> compensation can be paid if claimants were exposed to more than 0.25 Sieverts of radiation, enough to cause acute radiation poisoning. The government ruled that the three JCO workers at the site of the accident, who were exposed to massive amounts of radiation, were diagnosed as having received acute radiation injuries and that the damage was directly related to their activities at the plant. Therefore, under the Workers' Accident Compensation Insurance Law the Japanese Government is required to pay compensation for medical expenses and loss of earnings to the worker who survived the accident, as well as funeral expenses and a compensation pension to the survivors of the two workers who died. In this respect, on 14 January 2000, the Ministry of Labour stated that it would examine the possibility of exercising a right of recourse against JCO and SMM for part of the amount of compensation to be awarded to the three workers directly exposed (or to their families). The Worker's Accident Compensation Insurance Law provides for the exercise of such a right of recourse if the accident was caused through the company's negligence or intentional acts or omissions.

Section 3(1) of the Law on Compensation for Nuclear Damage provides that if the three JCO workers have suffered damage over and above the limit established in the Workers' Accident Compensation Insurance Law, they are entitled to receive compensation from JCO for the total amount of damage suffered, minus any benefits which they received under the above legislation.<sup>11</sup> However, to date these workers have only received compensation on the basis of the workers' compensation legislation.<sup>12</sup>

#### *Residents*

According to the information available to the NEA Secretariat, JCO paid a total of JPY 20 million to households living within a 350 metre radius from the plant in the form of "consolation payments". Such payments would not appear to be based on the JCO's obligations under the

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9. It is very difficult to estimate how much compensation JCO could provide. JCO's assets were estimated to be approximately JPY 4 billion, but in general, companies cannot mobilise the full amount of the estimated value of their assets.

10. See Annex I related to legislation governing the compensation of nuclear damage.

11. Section 4 of the Supplementary Provision to the Compensation Law.

12. The total amount of compensation paid to the three workers pursuant to the Workers' Accident Compensation Insurance Law is estimated at JPY 120 million. However, the NEA Secretariat could not obtain official confirmation of this figure.

legislation on compensation for nuclear damage, but rather they represent a Japanese legal tradition whereby discretionary payments are offered to victims of an accident by the persons responsible.

A number of residents in this zone deemed the above-mentioned consolation payments to be insufficient, and therefore introduced claims for compensation in excess of the initial payment described above to cover *inter alia* the cost of evacuation and medical examinations.

#### *Industrial and Agricultural Activities*

Claims were entered against JCO in respect of losses ensuing from the accident in the fields of agriculture (farming and fishing) and industry, and for costs incurred by the village in its management of the consequences of the accident.

The agricultural claims stemmed from reductions in demand for local foodstuffs after the accident. Shipment of the new harvest had to be suspended for three days after the criticality. Fishery co-operatives also suspended operations for three days, and the food processing industry voluntarily suspended shipments. Tokai is a major supplier of food to the Tokyo metropolitan area.

Information on the amounts of compensation paid in respect of agricultural and industrial activities is contained in the table reproduced in Annex II.

## ANNEX I

### Legislation governing the compensation of nuclear damage

#### *Compensation of nuclear damage*

The principles governing compensation of nuclear damage in Japan are set out in the Law on Compensation for Nuclear Damage [Law No. 147 of 17 June 1961] as amended (“the Compensation Law”), its implementing ordinance [Cabinet Order No. 44 of 6 March 1962] as amended, and the Law on the Indemnity Agreement for Compensation of Nuclear Damage [Law No. 148 of 17 June 1961] as amended (“the Indemnity Law”).

Japan is not a Party to either the 1960 Paris Convention on Third Party Liability in the Field of Nuclear Energy or the 1963 Vienna Convention on Civil Liability for Nuclear Damage. It has, however, incorporated in its legislation a number of the principles embodied in both Conventions.

The Compensation Law provides for the strict, exclusive and unlimited liability of the operator of a nuclear installation [Sections 3 & 4] in respect of nuclear damage caused, *inter alia*, by the manufacture of nuclear fuel material [Section 2(1)(ii)]. Nuclear damage is defined as any damage caused by the effects of the fission process of nuclear fuel material, or of the radiation from nuclear fuel material etc., or by the effects of the toxic nature of such material [Section 2].

The Ordinance on the Enforcement of the Compensation Law establishes in Section 2(iv) that the manufacture of such nuclear fuel elements must be covered by financial security of JPY 1 billion [approximately 9.3 million US dollars (USD)]. The Ordinance was amended in December 1999 to increase the amount of financial security which the operator of a nuclear installation is obliged to maintain. The compulsory financial security to cover a facility such as the JCO uranium conversion plant at Tokai-mura was raised to JPY 12 billion (approximately USD 114.4 million). The Amending Ordinance entered into force on 1 January 2000.

The Indemnity Law provides that the government may conclude an agreement with the operator, under which the government undertakes to indemnify the operator from his loss arising from compensating nuclear damage not covered by his financial security, in return for an annual indemnity fee. This legislation does not apply to the Tokai-mura incident, as the damage is covered by the insurance policy.

Section 16 of the Compensation Law provides that if the total damage exceeds the funds available from insurance cover, the government may provide financial assistance to victims if approved by the Parliament.

Since there is no specific provision governing the limitation period during which claims for compensation for nuclear damage should be entered, the general rules<sup>13</sup> governing prescription under the law of tort pursuant to the Civil Code are applicable.

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13. Under Section 724 of the Civil Code, the right to compensation for damage shall be extinguished if an action is not brought within three years from the date on which the person suffering damage had knowledge both of the damage and of the person liable for such damage. The right to compensation shall also be fully extinguished twenty years after the date on which a tort occurs.

Section 18 of the Compensation Law governs the possibility of establishing a Dispute Reconciliation Committee for Nuclear Damage Compensation, which shall mediate in any dispute arising from compensation of nuclear damage, and shall investigate and assess nuclear damage as necessary to settle such disputes.<sup>14</sup> Cabinet Order No. 281, adopted on 16 November 1979, further provided that the Committee members shall consist of a maximum of ten specialists in the legal, nuclear engineering, medical or other fields related to nuclear energy. These members shall be appointed by the Minister of Science and Technology.

### ***Compensation regime for radiation workers***

Radiation workers in Japan are subject to the general workers' compensation regime. This is comprised of the Labour Standards Law [No. 49 of 7 April 1947], which governs the relationship between employers and employees, and the Workers' Accident Compensation Insurance Law [No. 50 of 7 April 1947], which regulates insurance issues between the government – through the Ministry of Labour, Labour Standards Offices and Labour Standards Inspection Offices – and employees.

The Labour Standards Law in Chapter VIII [Sections 75-88] lays down principles governing the right to compensation of workers in the event of a work-related accident. Under this Law, the right to introduce a compensation claim shall be prescribed if an action is not brought within two years. The Workers' Accident Compensation Insurance Law regulates terms and conditions for the implementation of compensation awards under the Labour Standards Law.

Pursuant to the Workers' Accident Compensation Insurance Law, in the event of a work-related accident, the government indemnifies the employees with funds arising from insurance premiums contributed by employers and some government subsidies. However, if the compensation amount exceeds the limit calculated pursuant to the Workers' Accident Compensation Insurance Law,<sup>15</sup> the employer pays compensation beyond such limit on the basis of the Law on Compensation for Nuclear Damage.

The Workers' Accident Compensation Insurance Law provides for a right of recourse of the government against the employer if the accident resulted from the employer's wilful act or serious negligence.

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14. Such a Committee was set up on 22 October 1999 (see *supra*).

15. The Law does not establish a maximum limit, as this amount varies according to the worker's situation. The Law describes, however, the manner in which this limit should be calculated on the basis of different factors including *e.g.* age. It should be noted, however, that there is no limit for expenses incurred in respect of medical treatment.

## ANNEX II

### Compensation paid by JCO in respect of the accident of 30 September 1999<sup>16</sup>

| <i>Type of industry</i>                                 | <i>Number of claims settled</i> | <i>Percentage of total number of claims settled</i> | <i>Amount paid (in billions of yen)</i> | <i>Percentage of total amount</i> |
|---|---------------------------------|---|---|-----------------------------------|
| <b>Agriculture</b>                                      | 735                             | 10.7  | 1.26                                    | 10                                |
| <b>Fisheries</b>  | 22                              | 0.3   | 0.29                                    | 2.3                               |
| <b>Manufacture of foodstuffs</b>                        | 1 178                           | 17.1  | 3.82                                    | 30.1                              |
| <b>Manufacture (except foodstuffs)</b>                  | 402                             | 5.8   | 0.78                                    | 6.2                               |
| <b>Transportation (people/goods)</b>                    | 222                             | 3.2   | 0.24                                    | 1.9                               |
| <b>Wholesale, retail sale</b>                           | 1 218                           | 17.7  | 1.76                                    | 13.9                              |
| <b>Food and drink industry (e.g. restaurants, bars)</b> | 905                             | 13.1  | 0.81                                    | 6.4                               |
| <b>Tourism</b>  | 501                             | 7.3   | 2.03                                    | 16                                |
| <b>Others</b>   | 1 702                           | 24.7  | 1.69                                    | 13.3                              |
| <b>Total</b>  | 6 885                           | 100   | 12.68                                   | 100                               |

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16. Situation at 22 September 2000.