Compensation System for Nuclear Damage in Japan

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Background—Fukushima accident and nuclear energy

- Fukushima Accident

- Nuclear Energy
- As of Fiscal Year 2009, 54 commercial nuclear power plants are operating in Japan.
- Total electric power generation provided by nuclear power plants consists 30% of total electric power study.
Background—regulatory and legislative framework

• Regulatory Framework
  • Ministry of Economy, Trade and Industry (METI)
  • Agency for Natural Resources and Energy (ANRE)
  • The Nuclear and Industrial Safety Agency (NISA)
  • Ministry of Education, Culture, Sports, Science and Technology (MEXI)—liability
  • Advisory Bodies
    • Atomic Energy Commission (AEC)
    • Nuclear Safety Commission (NSC)
    • Radiation Council
    • Japan Atomic Energy Agency (JAEA)

• Legislative Framework
  • The Atomic Energy Basic Law
  • Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors
  • Act on the Prevention of Radiation Hazards due to Radioisotopes
  • Act on Compensation for Nuclear Damage (Act on Compensation)
    • The Order for the Execution of the Act on Compensation for Nuclear Damage (Order on Compensation)
  • Act on Indemnity Agreement for Compensation of Nuclear Damage (Act on Indemnity)
    • Order for the Execution of the Act on Indemnity Agreement for Compensation of Nuclear Damage (Order on Indemnity)
Liability Rules

• **Aim**: *protect victims* and contribute to the *nuclear development* through a compensation system for “nuclear damage caused by reactor operation”

• **Reactor Operation**: reactor operation, production, reprocessing, use and storage of spent fuel, waste disposal

• **Nuclear Damage**: *Any Damage* caused via the effects, radiation and toxic nature of such material (excluding damage suffered by liable nuclear operators)
Liability Rules

• **Channeling of Liability to Nuclear Operators**
  o Rights of recourse allowed: willful act of a third party; special agreement

• **Strict Liability**
  o Defense: damage caused via a grave natural disaster of an exceptional character/ insurrection

• **Prescription Period**
  o Not in Act on Compensation but general provisions in Civil Code: 3/20 years

• **Unlimited Liability with Financial Security** (liability insurance or indemnity agreement)

• **State Intervention**
  o Government aids a nuclear operator if damage exceeds the financial security and government deems it necessary
  o When liability is exonerated or damage exceeds financial security: relieve victims and prevent the spread of damage.
Financial Security

- Caps of financial security is set in Act and Order on Compensation according to the types of installations.
- For specific reactor and reprocessing facilities: 120 billion yen
- Other installations: 4-24 billion yen
- Form: liability insurance, indemnity agreement and a deposit approved by MEXT.
- MEXT also ensures the sufficient financial security.
Financial Security—Liability Insurance

- Nuclear insurance is provided by the insurance pool—the Japan Atomic Energy Insurance Pool (JAEIP)

- JAEIP: a liability insurance policy/property damage policy

- Coverage of liability policy: nuclear damage, legal expenses and the costs of measures to prevent the expansion of damage

- Exclude damage caused by natural disaster or by an insurrection, caused intentionally by the insured, use of nuclear energy for non-peaceful purpose and damage to property related to the insured.
Financial Security—Indemnity Agreement

- Indemnity agreement: the Government indemnifies the nuclear operator for its liability not covered by other financial security at the price of an indemnity fee.

- Covers:
  - nuclear damage caused by earthquake or volcanic eruption;
  - caused by normal operation;
  - suffering not claimed within ten years from the occurrence;
  - other damage provided in the Cabinet Order (e.g., damage resulting from a tidal wave)
Case Study—Fukushima Accident

- 9.0 Magnitude earthquake hits Japan on 11/3
- Failure of cooling system leads to full meltdown in reactors 1-3 at Fukushima I Nuclear Power Plant maintained by Tokyo Electric Power Company (TEPCO)
- Design of GE vulnerable to floods
- The events at units 1-3 rated as INES Level 7; at unit 4 as INES Level 4
Case Study—Fukushima Accident

- Liability: natural disaster of “an exceptional character”? 
- Dispute Reconciliation Committee for Nuclear Damage Compensation 
- Guidance: Preliminary, Secondary, added, interim guidance on the scope of compensable damage 
- Followed by the compensation plan of TEPCO 
- Scope based on the areas and nature of damage:
# Case Study—Fukushima Accident

| Damage due to evacuation instruction by the government | Medical examination expensive; evacuation expense; homecoming expense; temporarily returning home experience expense; life and bodily damage; mental damage; business damage; damages for incapacity to work; examination expenses for property, loss or diminishment of property value; |
| Damage due to the designation of the navigational hazard zone and the no-fly zone by the government | Business damage; damage due to incapacity |
| Damage due to shipment restriction of primary industry products by the government | Business damage; damage due to incapacity; examination expenses for property |
| Damage due to other governmental instruction | Business damage; damage due to incapacity; examination expenses for property |
| Reputation damage (damage due to rumors) | For agricultural, forestry, fisheries, pertaining processing, manufacturing and distribution industries, tourism; manufacturing and servicing industry; export |
| Indirect damage | Business damage, damage due to incapacity |
| Damage by radiation exposure | |
| Others | Property damage of local government |
Case Study—Fukushima Accident Environmental Damage

- Decontamination has been done

- Nuclear Emergency Response Headquarters: Basic Policy for Emergency Response on Decontamination Work; Basic Concept for Pushing Ahead with Decontamination—immediate targets and working principles for the next two years

- Establishment of “Fukushima Decontamination Promoting Team” on 24/8
Case Study—Fukushima Accident
Environmental Damage

- Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials Discharged by NPS Associated with the Tohoku District-Off the Pacific Ocean Earthquake that Occurred on March 11, 2011 (Act on Special Measures)
- Passed on 26/8/2011; Partially enter into force immediately, others from 1/1/2012
- Aim: reduce the influence of environmental pollution on human health and living environment

- Roles of different parties:
  - National government: MOE (leading) and other ministers; develop policies, plans, take measures
  - Local government: corporate with national measures and some measures by themselves
  - Nuclear operators: disposal waste onsite and corporate with government

- Major regimes
  - MOE: setting basic principles and standards
  - Monitoring and measurement of contamination
  - Implementation: disposal of wastes and decontamination

- Finance
Case Study—Fukushima Accident

- Catastrophic nature
- Payment till 19/10: 133.5 billion yen
- How to finance?
- Damage caused via natural disaster: excluded from liability insurance coverage and covered by indemnity agreement up to 120 billion yen; unlimited liability; potential government intervention
- Act to Establish Nuclear Damage Compensation Facilitation Corporation
**Analysis: complexity and flexibility—Comparison**

Other compensation regimes for nuclear liability

- **International**: IAEA regime/NEA regime
- **US**: Price-Anderson Act
- **Japan**: why not international regime?
- **Comparison**: divergences (complexity) and similarities (flexibility)

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<th>Nuclear damage</th>
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<td>Channeling of liability</td>
<td>Economic/legal channeling with the possibility of recourse?</td>
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<td>Strict liability</td>
<td>Scope of application; defence and explanation</td>
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<td>Unlimited/limited liability</td>
<td>Allow unlimited liability under international regime/limited financial security</td>
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<td>Financial security—liability insurance</td>
<td>By pool/only liability insurance or together with property damage</td>
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<td>Financial security—risk sharing agreement</td>
<td>International or national level/legislative or contractual arrangement/ex ante or ex post</td>
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<td>Governmental intervention</td>
<td>Structural or ad hoc/direct aids, government provided insurance, reinsurer as the last resort/finance</td>
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Analysis—flexibility in Japan

• Within Japan: flexibility
  o Scope of nuclear damage
  o Liable or not: exceptional character
  o To which extent: beyond the financial security—will government intervene? How will the liable operator finance the compensation beyond 120 billion yen? ex post/ad hoc arrangement?
  o Non-litigation measures; dispute committee; more negotiation than litigation, consolation payment

• Private interest approach:
Towards a Desirable Compensation System for Nuclear Damage?

- **Liability Rules:**
  - Clear definition of nuclear damage; not channeling; strict liability; unlimited liability

- **Financial Security:**
  - Cap doesn’t depend on capacity of insurance market
  - Ex ante arrangement of risk sharing agreement
  - Governmental intervention as the last resort, with market price