## Equipment to be Used in Controlled Areas

### 1. Values for various categories of controlled areas

<table>
<thead>
<tr>
<th>Category by degree of contamination</th>
<th>Contamination-A area (No contamination)</th>
<th>Contamination-B area (Contamination-B)</th>
<th>Contamination-C area (Contamination-C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface concentration of contamination (Bq/cm²)</td>
<td>No contamination</td>
<td>Less than 4</td>
<td>Less than 40</td>
</tr>
<tr>
<td>Radioactive material concentration in the air (Bq/cm³)</td>
<td>No contamination</td>
<td>Less than $1 \times 10^{-4}$</td>
<td>Less than $1 \times 10^{-3}$</td>
</tr>
</tbody>
</table>

Note:  
- Natural nuclides are not included in the reference values.  
- The reference values for surface concentration of contamination are based on the smear method.  
- Radioactive material concentration in the air is based on $^{60}$Co as a representative.

### 2. Standards regarding the wearing of protective clothing and equipment

<table>
<thead>
<tr>
<th>Protective clothing</th>
<th>Area category</th>
<th>Contamination-A</th>
<th>Contamination-B1</th>
<th>Contamination-B2</th>
<th>Contamination-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard work clothes</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Clothes B</td>
<td>—</td>
<td>✓</td>
<td>✓</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Clothes C</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>✓</td>
</tr>
<tr>
<td>anorak</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>✓*5</td>
</tr>
<tr>
<td>Gloves B</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Gloves C</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>✓*5</td>
</tr>
<tr>
<td>Thin rubber gloves</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>✓*6</td>
<td>—</td>
</tr>
<tr>
<td>Socks B</td>
<td>—</td>
<td>✓</td>
<td>✓</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Socks C</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Shoes B</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Shoes B2</td>
<td>—</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Shoes C</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>✓</td>
</tr>
<tr>
<td>Cap C</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>✓</td>
</tr>
<tr>
<td>Standard work helmet</td>
<td>✓</td>
<td>✓</td>
<td>✓*3</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Helmet B</td>
<td>—</td>
<td>✓</td>
<td>✓</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Helmet C</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>✓</td>
</tr>
</tbody>
</table>

---

*1 Wear protective clothing specified for Contamination-B1 areas when entering a Contamination-A area through a Contamination-B1 area.  
*2 These areas are classified as Contamination-B1 and B2 areas based on the degree of contamination.  
*3 This type of clothing may be used in place of Clothes B and Helmet B if it is considered unnecessary in terms of protection from radiation (e.g. during patrols).  
*4 This type of clothing may be used in place of standard work clothes or standard work helmets as required.  
*5 This type of clothing may be used as required.  
*6 This type of clothing does not need to be worn if it is considered unnecessary in terms of protection from radiation (e.g. during patrols).
3. Examples of protective clothing and equipment

Standard work clothes, Gloves B, Shoes B and Helmet B

Clothes B, Gloves B, Shoes B and Helmet B

Clothes B, Gloves B, thin rubber gloves, Shoes B2 and Helmet B

Clothes C, thin rubber gloves, Cap C and Socks C

Clothes C, thin rubber gloves, Cap C, Socks C, Shoes C and Helmet C (Gloves C as required)

Wind breaker jacket and pants

Full-face mask

Hooded mask
Figure 1  Data on the Progression of the Accident at Unit 2
Figure 2  Data on the Progression of the Accident at Unit 1
Figure 3  Data on the Progression of the Accident at Unit 3
Trends in the number of temporary access for residents into the restricted area

Number of residents and households entering the restricted area

Date

Number of residents entering the restricted area

Number of households entering the restricted area
Regarding Response to the Specific Spots Estimated to Exceed an Integral Dose of 20mSv Over a One Year Period After the Occurrence of the Accident

June 16, 2011
Nuclear Emergency Response Headquarters

1. The Government’s response to the spots where an integral dose will exceed 20mSv per year

・Outside the Deliberate Evacuation Areas as well as the Restricted Area, there exists plural spots inside certain areas that are not wide spread in region to warrant the designation of a Deliberate Evacuation Area, at which air dose rates have been maintained at a level that is estimated to exceed an integral dose of 20mSv over a one year period after the accident.

・The radiation dose decreases when going away from these spots, therefore, a risk of exceeding 20mSv per year through daily life in general is low. Considering that the level of 20mSv per year was adopted because it was the lowest figure within the range that ICRP and other organizations have indicated as a reference level, being different from the Deliberate Evacuation Areas where high dose areas expand in entire region, the spots are not in a situation that the Government should instruct across-the-board evacuation or restrict industrial activities from the standpoint of safety.

・On the other hand, it is natural for residents to feel anxious about the situation, and since the possibility of exceeding 20mSv per year depending on a person’s lifestyle cannot be ruled out, it is important for the Government to take measures for the issue. Therefore, these spots will be designated as “Specific Spots Recommended for Evacuation” and the Government will need to call the attention of residents in these spots, and assist and promote their evacuation.

2. Scheme

・Said spots are not hazardous enough to require across-the-board evacuation, therefore the immediate action will be to call the attention of
residents and to express the Government's assistance. On the other hand, in order to thoroughly ensure the safety and security of the residents in the vicinity of these spots, the Government will specify the spots and will address and clarify externally that adequate measures will be taken for these spots.

<Specifics of the Scheme>

(1) The Ministry of Education, Culture, Sports, Science and Technology (MEXT) will conduct even further detailed monitoring at the vicinity of these spots, and if the result of the measurement shows an air dose rate that is estimated to exceed 20mSv over a one year period, MEXT will promptly notify the Governor of Fukushima Prefecture and the Mayors and the Heads of relevant cities, towns and villages through the Local Response Headquarters.

(2) The Local Response Headquarters, Fukushima Prefecture and related municipalities will hold a discussion, and will designate the spots, which are hard to be decontaminated and will exceed 20mSv per year, as “Specific Spots Recommended for Evacuation” per residence. The Director-General of the Local Response Headquarters will notify said municipalities in writing.

(3) The municipalities will notify the residences individually that correspond to the “Specific Spots Recommended for Evacuation,” together with an explanatory document, covering, for example, monitoring results, impact of radiation, assistance measures that residents can utilize, and schedules of explanatory meetings, etc. For the evacuated households, the municipality will issue certificates as residents affected by the nuclear incident.

In particular, the Headquarters will consult with the municipalities to ask them to urge families with pregnant women or children, etc. to evacuate.

(4) Monitoring will be conducted periodically. Based on the result, the Local Response Headquarters, Fukushima Prefecture and related
municipalities will hold discussions and removal of a designation in a flexible manner.

(Note) This is a scheme to respond to such a situation, for example, that there are 50 households in the subject spot, of which 20 wish to evacuate, considering their lifestyles and family composition. The remaining 30 households in this case will not be required to evacuate.
Regarding Establishment of Specific Spots Recommended for Evacuation in Date City

June 30, 2011
Local Nuclear Emergency Response Headquarters

Based on the notification “Regarding Response to the Specific Spots Estimated to Exceed an Integral Dose of 20mSv Over a One Year Period After the Occurrence of the Accident” dated June 16, 2011 (Nuclear Emergency Response Headquarters), in view of the discussions by the Local Nuclear Emergency Response Headquarters, Fukushima Prefecture, and Date City, the Local Nuclear Emergency Response Headquarters has established “Specific Spots Recommended for Evacuation” for the residences in the below-listed regions, and issued the notification to Date City.

In the future, Date City will individually notify this establishment to the subject households of the residents in the City.

Furthermore, the Nuclear Emergency Response Headquarters will conduct continuously monitoring of the specified regions in addition to the support related to the evacuation and other actions of the residences in the area established as Specific Spots Recommended for Evacuation.

Details

Part of Kamioguni, Ryozenmachi, Date City: 30 spots (32 households)
Part of Shimooguni, Ryozenmachi, Date City: 49 spots (54 households)
Part of Ishida, Ryozenmachi, Date City: 19 spots (21 households)
Part of Tsukidate, Tsukidatemachi, Date City: 6 spots (6 households)
Regarding Establishment of Specific Spots Recommended for Evacuation in the City of Minami Soma

July 21, 2011
Local Nuclear Emergency Response Headquarters

Based on the notification “Regarding Response to the Specific Spots Estimated to Exceed an Integral Dose of 20mSv Over a One Year Period After the Occurrence of the Accident” dated June 16, 2011 (Nuclear Emergency Response Headquarters), the Local Nuclear Emergency Response Headquarters established “Specific Spots Recommended for Evacuation” on the residence in the area listed below, in light of the discussing with the Fukushima prefectural government and the authority of Minami Soma City, and notified Minami Soma City today.

Minami Soma City will hereafter notify the households living in the residences subject to the establishment individually.

Furthermore, the Nuclear Emergency Response Headquarters will provide support concerning evacuation and more for the residences designated as Specific Spots Recommended for Evacuation, as well as continue monitoring the specified region.

Details

A part of Jisabara, Kashima Ward, Minami Soma City
1 spot (1 household)

A part of Ogai, Haramachi Ward, Minami Soma City
13 spots (14 households)

A part of Ohara, Haramachi Ward, Minami Soma City
21 spots (21 households)

A part of Takanokura, Haramachi Ward, Minami Soma City
22 spots (23 households)

Total: 57 spots (59 households)
Regarding Establishment of Specific Spots Recommended for Evacuation in the City of Minami Soma

August 3, 2011
Local Nuclear Emergency Response Headquarters

Based on the notification “Regarding Response to the Specific Spots Estimated to Exceed an Integral Dose of 20mSv Over One Year Period After the Occurrence of the Accident” dated June 16, 2011 (Nuclear Emergency Response Headquarters), the Local Nuclear Emergency Response Headquarters established “Specific Spots Recommended for Evacuation” on 57 spots in the city of Minami Soma (59 households) on July 21 in light of the June 27th monitoring result.

This time, in light of the monitoring results of July 13, 18 and 21, the Local Nuclear Emergency Response Headquarters has discussed with the Fukushima Prefectural government and the authority of Minami Soma City, and has established “Specific Spots Recommended for Evacuation” on the residences in the regions listed below and notified Fukushima Prefecture and Minami Soma City. The specific spots include the residences of which the family composition was unable to be confirmed at the time of July 21st establishment.

The authority of Minami Soma City will hereafter notify the households subject to the establishment individually.

Nuclear Emergency Response Headquarters will provide support concerning evacuation and more for residences designated as Specific Spots Recommended for Evacuation, as well as continue monitoring the specified regions.

Details

A part of Jisabara, Kashima Ward, Minami Soma City 1 spot (2 households)
A part of Ogai, Haramachi Ward, Minami Soma City 3 spots (3 households)
A part of Ohara, Haramachi Ward, Minami Soma City 18 spots (19 households)
A part of Takanokura, Haramachi Ward, Minami Soma City 9 spots (11 households)
A part of Oshigama, Haramachi Ward, Minami Soma City
3 spots (3 households)

A part of Katakura, Haramachi Ward, Minami Soma City

2 spots (2 households)

A part of Baba, Haramachi Ward, Minami Soma City

29 spots (32 households)

Total: 65 spots (72 households)
Regarding Establishment of Specific Spots Recommended for Evacuation in the Village of Kawauchi

August 3, 2011

Local Nuclear Emergency Response Headquarters

Based on the notification “Regarding Response to the Specific Spots Estimated to Exceed an Integral Dose of 20mSv Over One Year Period After the Occurrence of the Accident” dated June 16, 2011 (Nuclear Emergency Response Headquarters), the Local Nuclear Emergency Response Headquarters established “Specific Spots Recommended for Evacuation” on the residence in the area listed below, in light of discussing with the Fukushima prefectural government and the authority of the village of Kawauchi, and notified the authority of the village of Kawauchi today.

The authority of the village of Kawauchi will hereafter notify the household living in the residence subject to the establishment individually.

Furthermore, the Nuclear Emergency Response Headquarters will provide support concerning evacuation and more for the residence designated as Specific Spots Recommended for Evacuation, as well as continue monitoring the specified region.

Details

A part of Mitsuishi / Kajioi Shimokawauchi, Kawauchi Village

1 spot (1 household)

Total: 1 spot (1 household)
June 30, 2011
Nuclear and Industrial Safety Agency

Regarding Lifestyle in “Specific Spots Recommended for Evacuation”

Today, this is to inform the public that Lifestyle in “Specific Spots Recommended for Evacuation” has been compiled.

(Contact Person)
Mr. Toshihiro Bannai
Director, International Affairs Office,
NISA/METI
Phone: +81-(0)3-3501-1087
Regarding Lifestyle in “Specific Spots Recommended for Evacuation”

June 30, 2011
Support Team for Residents
Affected by Nuclear Incidents

1. **Specific Spots Recommended for Evacuation**

   “Specific Spots Recommended for Evacuation” is where an integral dose of residents may reach 20mSv, if they continue to reside in the same spot for one year depending on lifestyle, but does not expand to the entire region or daily living areas, including areas of commuting to work and school, and going shopping.

   For this reason, possibility of the integral dose of residents to reach 20mSv in living a normal life is small and it is permissible to continue residing in the spots.

   It is possible to reduce radiation exposure by following the points below:

   (Things to keep in mind in daily life)
   - Usual clothing is fine when leaving home however wear a mask, if concerned.
   - After outdoor activities, make sure to wash hands and face, as well as gargle.
   - Be careful not to put soil or sand in the mouth. (Especially young children need to be careful and refrain from playing in sandboxes.)
   - If soil or sand got into the mouth, gargle thoroughly.
   - Remove mud from shoes as much as possible when coming home.
   - Do not drink river water or rain water.
   - There are no problems with drinking tap water, as long as there are no intake restrictions.
   - When eating vegetables grown in kitchen gardens, make sure to wash them sufficiently.
There are no problems with consuming food available in the market.

Avoid spending time outside when it’s windy.

Close windows when it’s dusty.

Avoid smoking, eating and such outside, where there is much dust.

There are no problems with using air-conditioning.

Make sure to wipe the body of pets that stay outside for a long time when taking them inside or touching them.

2. **Regarding Work/Operations in the Specific Spots Recommended for Evacuation**

   In the specific spots recommended for evacuation, even if work or operations involving industrial activities, including farming are carried out, possibility of the annual radiation exposure to reach 20mSv is small and therefore, it is permissible to carry out work and such.

   Moreover, it is possible to reduce the amount of radiation exposure by following the points below. Furthermore, refer to the attachment 3 if working near mud and fallen leaves accumulated in gutters/side ditches or spouting or air intake facilities of buildings.

(Things to keep in mind during work)

- Keep the outdoor work to a minimum and short as much as possible.
- Usual clothing (light clothing in summer) is sufficient during outdoor work however wear a mask, if concerned.
- Make sure to wash hands and face, as well as gargle after outdoor work.
- Remove mud from shoes as much as possible when going home.
- Avoid smoking, eating and such outside, where there is much dust.

3. **Approach towards Reducing the Amount of Radiation Exposure from the Environment**
Cleaning up mud and fallen leaves accumulated in gutters, side ditches and watercourses and spots where the mud and fallen leaves are collected and stored, as well as collection of sediments and cleaning up spouting and air intake facility will help reduce radioactive materials in the living environment.

Please follow the items below when carrying out these operations.

- Develop a plan in advance and keep the operations short, as well as keep the number of operations to a minimum.
- Wear a mask, rubber gloves, rubber boots, long-sleeves and such.
- Make sure to wash exposed areas, such as arms, legs and face thoroughly and gargle after work.
- Remove mud from shoes as much as possible and change clothing and try not to bring in dust and dirt inside after work.

Only if the work takes a long time to complete or management of removed mud and fallen leaves, such as storage and disposal is difficult, please consult the national or prefectural government or the relevant municipality beforehand.

4. Others

Regular monitoring will be carried out in the specific spots recommended for evacuation and its result will be provided to the residents. If possibility of the annual integral dose to reach 20mSv is confirmed to be zero based on the monitoring result, the established specific areas will be lifted on a flexible basis.
Overview of Heath Management Survey for the Residents in Fukushima Prefecture

June 18, 2011
Exploratory Committee for the Fukushima Health Management Survey

**Basic survey**

<table>
<thead>
<tr>
<th>Subjects:</th>
<th>Residents in Fukushima Prefecture as of March 11, 2011 (including those evacuated to other prefectures)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method:</td>
<td>Self-completion questionnaire</td>
</tr>
<tr>
<td>Details:</td>
<td>Record of actions since March 11 (estimated exposure dose evaluations)</td>
</tr>
<tr>
<td></td>
<td>e.g. dietary conditions</td>
</tr>
<tr>
<td>Implementation period:</td>
<td>August 2011 (depending on the progress made with the preliminary survey)</td>
</tr>
</tbody>
</table>

**Detailed survey**

<table>
<thead>
<tr>
<th>Subjects:</th>
<th>Residents in the evacuation areas and those deemed necessary based on the results of the basic survey (estimated to be approx. 200,000 people)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method:</td>
<td>Medical checkups (held at examination venues, medical institutions, and so on)</td>
</tr>
<tr>
<td>Details:</td>
<td>Questionnaire survey (lifestyle, mental health, etc.)</td>
</tr>
<tr>
<td></td>
<td>Body measurements, blood test and urine test (some blood and urine samples are to be stored)</td>
</tr>
<tr>
<td></td>
<td>* Thyroid ultrasonography for children (the implementation period has yet to be decided)</td>
</tr>
<tr>
<td>Implementation period:</td>
<td>To be decided</td>
</tr>
</tbody>
</table>

- The survey results are to be compiled into databases and managed on a long-term basis.
- The surveys will continue to be carried out next year and thereafter, but the intervals at which they should be conducted and what they should focus on are still under consideration.
Preliminary survey

This survey is to be conducted prior to the basic survey in order to identify and resolve problems in advance of the full-scale implementation of the basic survey throughout the prefecture. (Late June)

Subjects: Present and former residents of the target districts

Target districts: Namie Town, Iitate Village and Yamakiya District, Kawamata Town

Survey content: Same as the basic survey

Note: The method to be used for selecting the individuals to take the internal exposure test will be discussed with the target municipalities.
Reference

Efforts to manage the health of the residents in Fukushima Prefecture

1. Background

The lingering aftermath of the nuclear power plant accident has left Fukushima residents suffering from serious anxiety and mounting stress. Complaints include: “I don’t know how much radiation I have been exposed to” and “I am worried how this will affect my health in the future.” Moreover, a lack of basic information and variations in the quality of information are making matters even worse.

There is an increasing possibility that such anxiety and stress will result in local people experiencing a deterioration in their physical and mental health (e.g. aggravation of underlying diseases). Prolonged residence in evacuation shelters and other factors may also contribute to this deterioration.

2. Purpose

To help reduce anxiety that Fukushima residents have regarding the accident at the nuclear power plant and to ensure safety and peace of mind through long-term health monitoring.

3. Initiatives

(1) Fukushima Prefecture Health Monitoring Survey

1) Aims
   To reduce anxiety by estimating and presenting information on radiation doses
   To implement long-term health management based on the survey results

2) Details
   A basic survey and then a detailed survey will be conducted
   A preliminary basic survey is to be conducted in a few selected districts.

* An internal exposure test is also to be carried out as part of the surveys.
(2) Efforts to alleviate the anxiety of Fukushima residents

- Provision of information to local residents
- Holding of seminars and training sessions for healthcare professionals, etc.

(3) Provision of healthcare and medical services

Medical checkup and health counseling services for local residents will continue to be provided, and this is expected to help prevent any deterioration in the health of local residents by providing them with appropriate healthcare and medical services.
Health Management Survey for the Residents in Fukushima Prefecture (for all the prefecture’s residents)

Basic survey
Subjects: Residents in Fukushima prefecture as of March 11, 2011
Method: Self-completion questionnaire
Details: Record of actions since March 11 (estimated exposure dose evaluations)

Detailed survey
Thyroid gland examination (to be conducted for all Fukushima prefecture residents aged 18 or younger, including those taking refuge outside the prefecture)
Details: Thyroid ultrasonography
* Ascertain the present condition of all survey participants in the next three years and conduct periodic examinations thereafter

Medical checkups (utilizing existing medical checkups)
Subjects: Residents residing in evacuation areas, etc
Details: General medical checkup items as well as differential white blood count, etc.

Ongoing management
Health management file (provisional name)
Results of health surveys and examinations recorded and retained by individuals
Increase awareness of radiation

Creation of a database
Utilized for long-term healthcare and medical treatment of Fukushima prefecture residents
Knowledge acquired in providing healthcare will be used for future generations

Consultation and support
• Whole-body counter
• Individual dosimeter

Follow-up
Conducting of medical checkups for Fukushima prefecture

Treatment
Survey regarding mental health and lifestyle (questionnaire survey targeting residents in evacuation areas, etc.)
Survey regarding pregnant women and nursing mothers (questionnaire survey targeting residents who applied for a maternity and child health handbook between August 1, 2010 and July 31, 2011)
<table>
<thead>
<tr>
<th>Nuclide</th>
<th>Provisional regulation values of radioactive materials in food in accordance with the Food Sanitation Act (Bq/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radioactive iodine (Representative radio-nuclides among mixed radio-nuclides: $^{131}$I)</td>
<td></td>
</tr>
<tr>
<td>Drinking water</td>
<td>300</td>
</tr>
<tr>
<td>Milk, dairy products¹</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>2,000</td>
</tr>
<tr>
<td>(Except root vegetables and tubers)</td>
<td></td>
</tr>
<tr>
<td>Fishery products</td>
<td></td>
</tr>
<tr>
<td>Radioactive cesium</td>
<td></td>
</tr>
<tr>
<td>Drinking water</td>
<td>200</td>
</tr>
<tr>
<td>Milk, dairy products</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>500</td>
</tr>
<tr>
<td>Grains</td>
<td></td>
</tr>
<tr>
<td>Meat, eggs, fish, etc.</td>
<td></td>
</tr>
<tr>
<td>Uranium</td>
<td></td>
</tr>
<tr>
<td>Infant foods</td>
<td>20</td>
</tr>
<tr>
<td>Drinking water</td>
<td></td>
</tr>
<tr>
<td>Milk, dairy products</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>100</td>
</tr>
<tr>
<td>Grains</td>
<td></td>
</tr>
<tr>
<td>Meat, eggs, fish, etc.</td>
<td></td>
</tr>
<tr>
<td>Alpha-emitting nuclides of plutonium and transuranic elements (Total radioactive concentration of $^{238}$Pu, $^{239}$Pu, $^{240}$Pu, $^{242}$Pu, $^{241}$Am, $^{242}$Cm, $^{243}$Cm, $^{244}$Cm)</td>
<td></td>
</tr>
<tr>
<td>Infant foods</td>
<td>1</td>
</tr>
<tr>
<td>Drinking water</td>
<td></td>
</tr>
<tr>
<td>Milk, dairy products</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>10</td>
</tr>
<tr>
<td>Grains</td>
<td></td>
</tr>
<tr>
<td>Meat, eggs, fish etc.</td>
<td></td>
</tr>
</tbody>
</table>

¹ Provide guidance so that materials exceeding 100 Bq/kg are not used in milk supplied for use in powdered baby formula or for direct drinking.
This page intentionally left blank
Food Safety Commission of Japan of Cabinet Office

Food Safety Risk Assessment
Radioactive Nuclides in Foods
(DRAFT)

The food Safety Commission, Japan (FSCJ)
Working Group for an assessment of the effect of radioactive nuclides in food on health
July, 2011
(Original is written in Japanese. English translation is made by FSCJ Secretariat)

ABSTRACT

In response to the accident at the Fukushima I Nuclear Power Plant by Tokyo Electric Power Company (TEPCO) and detection of higher-than-normal radiation levels near the plant after the Great East Japan Earthquake that occurred on March 11, 2011, the Ministry of Health, Labour and Welfare (MHLW) adopted Indices for Food and Beverage Intake Restriction posted by the Nuclear Safety Commission of Japan as provisional regulation values. These provisional regulation values were established urgently without an assessment of the effect of food on health; thus, on March 20, 2011 the Minister of Health, Labour and Welfare requested the Food Safety Commission of Japan (FSCJ) to conduct an assessment according to Article 24, Item 3 of the Food Safety Basic Act.

For this risk assessment of the effect of food on health, a wide-ranging publications on radioactive material were analyzed including references cited in reports of radioactive materials by Agency for Toxic Substances and Disease Registry (ATSDR) and United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), documents published by International Commission on Radiological Protection (ICRP) and World Health Organization (WHO). Numbers of publications available on health effect by oral ingestion of radioactive materials were limited. Therefore not only the reports on internal exposure from oral ingestion, but findings related to the toxicity of chemical substances were extensively collected. Radioactive nuclides which were examined are: radioactive iodine, radioactive cesium, uranium, plutonium, α particles of transuranium elements (americium and curium), which the provisional regulation values are defined by the MHLW, and additionally, radioactive strontium. However there were little data on health effect by oral ingestion of examined radionuclides. Tolerable daily intake (TDI) was decided to be established for uranium, whose toxicity as the chemical substance was determined to exceed the toxicity effect from radiation. Apart from uranium, there are still important radioactive nuclides: radioactive iodine, which exerts a profound effect on thyroid thus, could lead to thyroid cancer, and radioactive cesium, which was considered to be most critical radioactive nuclide in regard to intake from food according to current detection outcome of radioactive materials in food. However there are not enough knowledge on all the radioactive nuclides except uranium including radioactive iodine and radioactive cesium to establish risk assessment on each radioactive nuclide.

Based on the findings above, the effect on health of low dose radiation to human health was investigated, and concluded. Only for uranium, TDI was established.

Epidemiological data have various limitations, however, by fully recognizing those limitations, FSCJ’s working group conducted its own investigation based on available publications. The publications were classified from various viewpoints such as the validity of study design and study subject population, existence or non-existence of statistically significant difference, appropriateness of estimated exposure amount, the influence of the confounding factors, and the presence of uncertainty referred by the author in order to identify its applicability for this assessment.

As a result, following studies covering the detection of effect at low dose radiation to human health and studies reporting no detection of effect at high dose radiation to human health in adults based on a large body of epidemiological data were taken into consideration as authentic research.
(1) A study reporting no identification of increased cancer risk in high background radiation area in India where the cumulative radiation dose is 500 mGy or higher. (Nair et al.2009)
(2) A study covering the excessive relative risk of solid cancer mortalities among atomic bomb survivors in Hiroshima and Nagasaki. A significant linearity was observed for dose-response relationship in groups exposed to the dose range of 0-125 mSv, but no significant relationship was observed in groups exposed to the dose range of 0-100 mSv. (Preston et al. 2003)
A study reporting estimated relative risk of leukemia mortalities among atomic bomb survivors in Hiroshima and Nagasaki. In the case where the estimated relative risk of leukemia mortalities among atomic bomb survivors in Hiroshima and Nagasaki was compared to those in the control group (0 Gy), statistically significant increase was observed in organ-absorbed dose over 0.2 Gy, but no significant difference was observed in dose below 0.2 Gy. (Shimizu et al. 1988)

Based on the above mentioned researches, the WG concludes that more than around 100 mSv of cumulative effective doses of radiation during lifetime could increase the risk of effect on health. The amount does not include radiation from natural environment and medical exposure.

The vulnerability of children was pointed out, who have greater risks of developing thyroid cancer and leukemia than adults do.

Some epidemiological researches indicate the health effects from radiation doses at below 100 mSv, however data reliability of those researches remains uncertain.

There is an undeniable possibility that health effect from low radiation doses has not been validated by epidemiological research considering various factors. Therefore, health effect from cumulative exposure below 100 mSv excluding natural and medical radiation exposure during life time are difficult to be verified based on the current available knowledge.

For uranium, an administration study in drinking water for 91 days was conducted on groups of 15 male and 15 female weanling Sprague-Dawley rats. LOAEL of uranium was proposed 0.06mg/kg bw/day based on changes in kidney tubule functions were seen in all administered rats. Nuclear vesiculation of the tubular epithelial nuclei were observed in both sexes. In males, proximal tubular dilatation, apical displacement of the proximal tubular epithelial nuclei, and cytoplasmic vacuolation were observed. (Gilman et al. 1998 a) In this study, various examinations were conducted including the histopathological surveys. The calculation of TDI was considered to be applicable based on the LOAEL with safety factor of this study. No further adjustment was considered necessary to add a safety factor based on a sub-chronic study for 91 days, on the ground of nonsevere influence of uranium on kidney from this experiment, and the disposition, rapid excretion of uranium as well as rapid return to its steady state. Considering the rapid excretion of uranium from human kidney, the application of safety factor 300 was determined to be adequate. (species difference: 10, individual difference: 10, extrapolation of LOAEL to NOAEL: 3 ) Hence regarding uranium, based on 0.06 mg/kg bw/day as LOAEL from the result of toxicity study in rat, the WG proposed 0.2μg/kg bw/day as TDI with the safety factor 300.

REFERENCES extracted in this abstract


Concepts of Inspection Planning and the Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies

The Nuclear Emergency Response Headquarters

I. Purpose

On March 17, 2011, the provisional regulation values for radioactive materials were established based on the Food Sanitation Act (Law No. 233 issued in 1947). On April 4, the “Concepts of Inspection Planning and the Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies” were compiled based on findings obtained until then. Since then, while the level of radioactive iodine detected in foods has declined, radioactive cesium exceeding the provisional regulation values has been detected in certain foods. This has led us to reorganize the concepts of the following, based on the current findings: the inspection planning to properly judge the need for the restriction of distribution and/or consumption of foods; the judgment criteria on the necessity for the restriction of distribution and/or consumption based on inspection results; and the cancellation of the restriction of distribution and/or consumption.

This revised “Concepts of Inspection Planning and the Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies,” in light of the nature of radioactive materials released and the status in which they have been detected in foods, intends to change the focus from one that emphasized on foods susceptible to the fallout of radioactive iodine emitted immediately after the nuclear power plant accident to that based on the impact of radioactive cesium and the actual situations of the public consumption of foods.

The implementation of the revised “Concepts of Inspection Planning and the Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies” will be managed based on findings obtained so far (regarding the fallout and attachment of radioactive materials; their migration from water, farm soil, and atmosphere; and the effects of production and feeding of animals).

Information on the system for implementing inspections of radioactive materials at the local government level will continue to be obtained, on an as-needed basis. The relevant Ministries will also consider securing a medium- and long-term inspection system.

II. Inspection planning for the local governments

1. Basic concepts

   Additional requirements were set out in the “Manual on Radiation Measurement of Foods in Emergency Situations” (March, 2002).

2. The local governments concerned

   (1) The local governments instructed by the Prime Minister and the adjacent local governments
Fukushima Prefecture, Ibaraki Prefecture, Tochigi Prefecture, Gunma Prefecture, Chiba Prefecture, Kanagawa Prefecture, Miyagi Prefecture, Iwate Prefecture, Aomori Prefecture, Akita Prefecture, Yamagata Prefecture, Niigata Prefecture, Nagano Prefecture, Saitama Prefecture, Tokyo, Yamanashi Prefecture, and Shizuoka Prefecture

(2) The local governments separately instructed depending on the status of the detection of radioactive materials

3. Items concerned

(1) Items in which radioactive materials exceeding the provisional regulation values have been found

i. Vegetables (those cultivated outdoor are selected on a priority basis)
   - Non-lead type leafy vegetables (e.g. Spinach, Komatsuna); Turnip; Cabbage; Broccoli; Parsley; Japanese parsley; Ume; Log-grown shiitake (outdoor cultivation); Bamboo shoot; Ostrich fern; Raw tea leaf; Unrefined tea leaf; and Refined tea leaf

ii. Milk

iii. Fishery products
   - Sand lance; Whitebait; Greenling; Brown hakeling; Hen-clam; Blue mussel; Northern sea urchin; Wakame seaweed; Sea oak; Hijiki; Japanese smelt; Cherry salmon; Ayu; and Japanese dace

iv. Meat
   - Beef

(2) Major items which take into account of the amount of the public consumption

(Reference) The items ranked high in the public consumption level in the National Health and Nutrition Survey (based on the survey of 2008)

- Rice; Tea for drinking; Milk; Lightly colored vegetables (including Japanese radish, Cabbage, Chinese cabbage, Onion, and Cucumber); Deeply colored vegetables (including Carrot, Spinach, and Tomato); Egg; Pork; Potatoes (including Potato, Sweet potato, and Satoimo); Citrus; Fruits (e.g. Apple, Grapes, and Nashi); Fishery products; Mushrooms; Chicken; and Algae

(3) Items whose restriction of distribution was cancelled at the local government level

(4) Items separately instructed by the government

(5) Other items concerned

i. Major agricultural products which take into account of the status of production

ii. Foods distributed in the market (whose information on producers is identified)

As for the fisheries products that migrate in wide areas, the government separately instructs local governments.

4. The designation of inspection areas

In order to grasp the spread of radioactive contamination, local governments divide their prefectural areas into appropriate zones, based on the actual situations of production, the landing of captured fishes, and the labeling of origins. Samples are then collected in a multiple number of municipalities per zone concerned.
Inspections are implemented in a multiple number of municipalities within targeted inspection areas. Regarding the selection of the municipalities to be inspected, those where radioactive materials exceeding the provisional regulation have been detected in foods are given priorities, and the concentration of cesium in soil and the results of environmental monitoring inspections are taken into consideration.

5. The frequency of inspections

Inspections are planned in accordance with the actual situations of the production and distribution and/or consumption of items and carried out on a regular basis (in principle, about once a week, by designating a day of the week). As for items whose distribution period is limited, they are inspected in a period from 3 days prior to the first distribution to an early stage of the distribution. Other items are regularly inspected.

However, when radioactive materials exceeding or close to the provisional regulation values are detected, inspections are strengthened.

The government may separately instruct local governments on the frequency of inspections as needed.

III. The requirements for establishing items and areas to which restriction of distribution and/or consumption of foods concerned applies by the government

1. Items

When it is considered that the areas producing the items exceeding the provisional regulation values have been spread out, relevant areas and items become subject to restriction.

2. Areas

Prefectural areas are inspected, as a rule, considering that the obligation of labeling origins regulated under the Japan Agricultural Standards is by the unit of prefecture. However, prefectures can be divided into a multiple number of areas if they can be administered by prefectures and municipalities.

3. Consideration for the establishment of restrictions

(1) The establishment of restrictions is considered per item, based on inspection results.

(2) For consideration of the establishment of restrictions, inspection results are consolidated and their applicability with the requirements is judged in a comprehensive way. Instructions for additional inspections are given as necessary.

(3) When the territorial spread of items exceeding the provisional regulation values is uncertain, the surrounding areas are inspected to determine the need for the restriction of distribution and the areas where distribution is to be restricted.

(4) When a significantly high level of concentration is detected in items, the restriction of consumption is immediately established, regardless of the number of samples collected for the items concerned.

IV. Cancellation of items and areas to which restriction of distribution and/or consumption of food concerned applies by the government

1. Application for cancellations
The cancellations will be based on the application of the relevant local governments.

2. Areas in which cancellation applies
Prefectures can be divided into a multiple zones, in the light of the actual situations of the shipments of the items.

3. Requirements for cancellations
   (1) The restriction of distribution instructed based on the detected values of radioactive iodine
       In principle, inspections are conducted in a multiple number of municipalities once a week per relevant zone, and the inspection results must indicate below the provisional regulation values for 3 consecutive times (Inspections must be conducted in municipalities where radioactive materials exceeding the provisional regulation levels were detected in the past. In other municipalities, in principle, inspections shall not be conducted in the same municipalities where inspections were implemented before.)
   (2) The restriction of distribution instructed based on the detected values of radioactive cesium
       In principle, inspection results obtained at 3 or more points per municipality in each zone concerned within the last one month must all indicate below the provisional regulation values. (Inspections must be conducted in municipalities where radioactive materials exceeding the provisional regulation levels were detected in the past).

The judgment of cancellation is determined in consideration with the status of the TEPCO’s Fukushima No. 1 Nuclear Power Plant.

4. Inspections following the cancellation of restrictions
   When radioactive materials exceed the provisional regulation values following the implementation of the same inspections as in above 3, necessary measures are taken.

V. Other
   The government may separately give instructions to local governments on the matters from I to V as needed.

Attachment: Handling of individual items

a. Vegetables, fruits, and the like
   Attachment 1
b. Milk
   Attachment 2
c. Tea leaf
   Attachment 3
d. Fishery products
   Attachment 4
e. Wheat, Barley, and the like
   Attachment 5
f. Beef  
   Attachment 6  
g. Rice  
   Attachment 7
Vegetables, fruits, and the like

1. Inspection planning for the local governments concerned
   Inspections are conducted on the major items and at the major producing areas, during a period from 3
days prior to the first distribution to an early stage of the distribution, in principle. When there is no
problem, inspections are implemented at regular intervals per month.

2. The establishment of items and areas to which the government imposes restrictions on distribution
   and/or consumption
   (1) Areas
   The restrictions of distribution and/or consumption can be established or cancelled by unit with a
   clear geographical scope, such as a city, town, and village, if the restrictions can be administered by
   prefectures and municipalities, by taking into account the unit of distribution.

   (2) Items
   In principle, restrictions are established or cancelled by item. Also, they can be established or
   cancelled by items’ groups, by setting indicator produces. In addition, restrictions can be established
   or cancelled by cultivation method, if prefectures and municipalities can administer them by
   distinguishing those grown in hothouses from those cultivated outdoors.

3. The cancellation of items and areas to which the government imposes restrictions of distribution and/or
   consumption
   (1) Requirements for the cancellation
   Taking into consideration that radioactive cesium in soil migrates to vegetables, fruits, and the like,
   requirements for cancelling restrictions of distribution and/or consumption shall be as follows:
   a. In order to cancel restrictions on items within specific areas, 3 or more sampling points are selected
      per municipality in areas in which the items concerned are produced. (to the extent possible,
      samples are obtained at the same points where those samples used to decide restrictions of
      distribution were collected).
   b. Samples are collected in each sampling point and inspected.
   c. Restrictions on the items and areas concerned are cancelled when the results of inspections carried
      out within the last month show below the provisional regulatory values (including not detectable) at
      all sampling points of the items concerned within areas where the cancellation is being considered.

   If the shipments of the items concerned in restricted areas is finished, restrictions of distribution and/or
   consumption can be cancelled, based on inspection results obtained 3days prior to the next distribution
   begins.

   (2) Measures to be taken following the cancellation of restrictions
Samples are regularly collected and inspected while distribution continues even after restrictions have been lifted, and the results are made public.

As for the frequency of inspections, inspections are conducted, in general, once per month, when inspection results of radioactive iodine and radioactive cesium obtained in the last month all indicate below the provisional regulatory values in a stable manner.
1. Inspection planning for the local governments concerned
   (1) Collection of samples
       Samples are collected by the unit of cooler station or dairy plant (or all those who directly
distribute to dairy plant).
   (2) The frequency of inspections
       As a rule, samples are collected, in general, every 2 weeks on a continuous basis and inspected.

2. The requirements for establishing items and areas to which restriction of distribution and/or
consumption of foods concerned applies by the government
   (1) Areas
       When prefectures are divided into a multiple number of areas, the restrictions of distribution and/or
consumption can be established and/or cancelled by the unit of municipalities where cooler station
or dairy plant (or all those who directly distribute to dairy plant) belong.
   (2) Consideration for the establishment of restrictions
       When, as a result of the inspections above 1, radioactive materials exceeding the provisional
regulation values are detected, the need for additional inspections, the necessity for the restriction of
distribution, and restricted areas are assessed, by taking into account inspection results obtained in
other areas.

3. The cancellation of items and areas to which the government imposes restrictions of distribution and/or
consumption
   (1) Requirements for the cancellation
       Samples are collected and analyzed by the unit of cooler station or dairy plant (or all those who
directly distribute to dairy plant). When, as a result of the analyses meet criteria, restrictions of
distribution and/or consumption are cancelled by the unit of municipalities where cooler station or
dairy plant (or all those who directly distribute to dairy plant) belong.
       Radioactive iodine shall become less than 100Bq/kg (including not detectable) for 3 consecutive
times.
   (2) Inspections following the cancellation of restrictions
       Even after the restriction is cancelled, samples are collected and analyzed on a regular basis, and
the results are made public.
       As for the frequency of inspections, when inspection results of radioactive iodine and radioactive
cesium obtained in the last month all indicate below the provisional regulatory values in a stable
manner, the frequency of the inspections can generally be made to every 2 weeks.
Tea leaf

1. Inspection planning for the local governments concerned
   Tea leaves are inspected per harvest period, such as first flush tea and second flush tea. In principle, unrefined tea leaves are inspected one or more times, during a period from 3 days prior to distribution to the initial stage of the distribution, in the main production areas.

2. Requirements for establishing items and/or areas to which the government imposes restrictions of distribution and/or consumption
   The restrictions of distribution and/or consumption can be established or cancelled by unit with a clear geographical scope, such as a city, town, and village, if the restrictions can be administered by prefectures and municipalities, by taking into account the unit of distribution.

3. Cancellation of items and/or areas to which the government imposes restrictions of distribution and/or consumption
   (1) Requirements for the cancellation of restrictions
       In order to cancel the restrictions of distribution of tea leaves cultivated in the next and following harvest periods, samples are collected, in principle, at 3 or more places in a municipality in an area where the cancellation of the restriction is being considered (to the extent possible, the samples are obtained at the same points where those samples used to decide restrictions of distribution were collected). Inspections are conducted based on these samples.
       The restriction of the distribution is cancelled when, as a result of the inspections, the concentration level of radioactive cesium becomes less than the provisional regulatory values (or not detectable, and such) at all sampling points in an area where the cancellation of the restriction is being considered.

   (2) Measures to be taken after cancellation
       Even after the restrictions are lifted, tea leaves are inspected per harvest period, and the results are made public.
Fishery products

1. The formulation of inspection plans and implementation of inspections
   Inspections are conducted on the major items and at the major fishery sites in a planned manner as follows. When inspected, the items are distinguished between farmed-grown and naturally-grown ones, even when they are the same species.

   (1) The designation of inspection areas
   Inspection areas are designated as follows by taking into account the situations of the environmental monitoring.
   1) Inland water fishes (e.g. Cherry salmon, Japanese smelt, and Ayu)
      Prefectural areas are divided into appropriate zones, by taking into account of the ranges of fishery rights in rivers and lakes. Samples are then collected in the major areas per zone.

   2) Coastal fishes
      Prefectures’ coasts are divided in to appropriate zones, by taking into consideration of fishery sites and seasons of the fisheries concerned and in the lights of the actual situations of the landing of captured fishes and the fishery managements (e.g. the ranges covered by fishery rights and the detail of fishery permission). Samples are then collected at the major landing ports in the zones concerned.
      The main items are selected per fishery season, by taking into consideration of the fish habitats such as surface layer (e.g. juvenile sand lance), middle layer (e.g. sea bass and sea bream), deep layer (e.g. founder and conger eel), and for seaweed.

   3) Migratory fishes (e.g. bonito, sardine and mackerel, saury, salmon)
      Fishery sites extending from Chiba Prefecture to Iwate Prefecture are divided by prefectural offshore, (demarked by the east due lines originating from each prefectures’ borders), by taking into consideration of the migratory habitats of fishes concerned. Samples are then collected at the major landing ports in the zones concerned.

(2) The frequency of inspections
  1) Inspections are carried out prior to the beginning of fishery seasons, by taking into consideration of the situation of the discharge of contaminated water from the nuclear power plant.

  2) After the fishery seasons begin, inspections are conducted, in principle, once per week. When inspection results obtained in the last month indicate below the provisional regulatory values in a stable manner, the frequency of the inspections can be decreased (for example, to every 2 weeks).
2. The establishment of items and areas to which the government imposes restrictions on distribution and/or consumption

(1) Items and areas
In principle, the restrictions are established or cancelled by item and by the fishery site. Also, they can be established or cancelled with the distinction of farmed-grown fishes and naturally-grown ones.
In case the fish species is captured under the permission by the Minister of Agriculture and Fisheries, such as the case of migratory fishes, instructions to restrict distribution and/or consumption are issued to the Minister.

(2) Consideration for the establishment of restrictions
The following inspections are implemented per fishery site and fish species. Depending on the inspection results, the need for the instruction to restrict distribution and the zones of fishery sites where distribution is to be restricted are determined. Furthermore, the spread of radioactive contamination will be investigated as necessary.

1) Inland water fishes
By taking into account the ranges covered by fishery rights at the fishery sites where radioactive materials exceeding the provisional regulatory values were detected, the surrounding fishery sites (e.g. upper and lower streams of rivers, and the main stream and branches of rivers) are inspected.

2) Coastal fishes
By taking into account the actual situations of the landing of captured fishes, permission of fishery, and the ranges covered by fishery rights at the fishery sites where radioactive materials exceeding the provisional regulatory values were detected, the surrounding fishery sites are inspected.

3) Migratory fishes
Considering the impact of the nuclear power plant accident, and fish behavior that fishery sites move as fishes migrate, fishery sites (per prefectural offshore) where radioactive materials exceeding the provisional regulatory values were detected or the surrounding fishery sites are inspected.

Note: When the restriction of distribution is established, an instruction is given to properly indicate the fishery sites when labeling origins of the fishes concerned.

3. Requirements for the cancellation of items and areas to which the government imposes restrictions on distribution and/or consumption

(1) Areas where cancellation are to be cancelled
The fishery sites where cancellations are applied can be divided into a multiple zones, by taking into consideration of the situations of the landing of captured fishes and the fishery management
(e.g. the ranges covered by fishery rights and the detail of fishery permission).

(2) Requirements for the cancellations

1) Inland water fishes

In order to cancel the restrictions at fishery sites, in principle, a multiple number of fishing points of the fishery areas where the cancellation to be applied shall be inspected every week in general (about 3 times), by taking into account the fluctuations in the situation of the radioactive contamination due to the weather condition. Then, the inspection results obtained within the last one month must all indicate below the provisional regulation values. Points where radioactive materials exceeding the provisional regulation values were detected in the past shall be inspected (unless the samples cannot be collected).

2) Coastal fishes

In order to cancel restrictions at fishery sites, in principle, inspection results obtained at 3 or more points where the cancellation to be applied (limited to those inspected within the last one month) must all indicate below the provisional regulation values. In cases of sedentary shellfish, crustaceans, and seaweed, and low-migratory species, such as demersal fishes, points where radioactive materials exceeding the provisional regulation values were detected in the past shall be inspected (unless the samples can be collected).

3) Migratory fishes

In order to cancel restrictions at fishery sites, as a rule, inspection results obtained at 3 or more points where the cancellation to be applied (limited to those inspected within the last month) must all indicate below the provisional regulation values.

When the fishes concerned can no longer be captured in the restricted zones due to the migration of fishes from the restricted zones to the outside or the end of fishery seasons, the restrictions of distribution can be cancelled, based on inspection results obtained before the next fishery seasons of fishes concerned begin.

(3) Measures to be taken following the cancellation of restrictions

When fishery operations continue after the restrictions are cancelled, inspections are conducted according to 1-(2)-2, and the results are made public.
Wheat, Barley, and the like

1. The plans and implementation of inspections for the local government concerned
   Because almost entire wheat, barley, and the like are collected by agricultural cooperatives and sold to
   specific users, such as flour milling companies, safety can be checked by the unit of lot*. Therefore,
   inspections are conducted by the lot unit at the country elevators or storage warehouses.
   *The lots for inspections are set up by the type of cereal per commercial collector, such as agricultural
   cooperatives. The lots are established by storage silo at country elevators. When the lots stored at
   storage warehouses, they are generally established with an upper limit of about 300 tons.

2. The implementation of inspections for all lots and measures to be taken based on inspection results
   (1) The implementation method for all lots
   The local governments implement inspections on all lots in areas where the following applies:
   - The air radiation dose rates measured during the season of developing and blooming of wheat ears
     exceed the normal backgrounds (the level in which the air radiation dose rate becomes 0.1 μSv/h
     when it is calculated to two decimal places and rounded down to one decimal place); or
   - The concentration of radioactive cesium in farmland soil (sampled at the depth of 15 cm from the
     surface soil) is 1,000 Bq/kg or above.
   In addition, in areas other than the above, when the results of the first lot inspections carried out by the
   local governments exceed certain levels, they shall also inspect all lots.

   (2) Measures to be taken based on inspection results
   The lots which exceed the provisional regulation values based on the inspection results shall not be
   sold, in accordance with the Food Sanitation Act (restrictions of distribution based on the Act on
   Special Measures concerning Nuclear Emergency Preparedness are not applicable).
Beef

1. Cancellation of items and/or areas to which the government imposes restrictions of distribution and/or consumption

The cancellation of shipment restriction related to beef exceeding the provisional regulation values due to rice straw contaminated by high concentrations of radioactive cesium shall be approved, if an appropriate feeding control is fully enforced after shipment restrictions are instructed, and applications for the partial cancellation of shipment restrictions are filed based on the setting up of the following safety management system for beef.

(1) In specifically designated areas, all cattle will be subject to testing. Only those beefs whose levels of radioactive cesium fall below the provisional regulation values will be approved for sale.

(2) In areas other than (1), all livestock farms will be subject to testing, in which at least one head of cattle will be tested in each farm in the first shipment. Only those farmers whose tested cattle show the levels of radioactive cesium sufficiently below the provisional regulation values will be approved to ship and slaughter their cattle. These farmers will continue to be subject to regular testing following such approval.
Rice

1. Inspection planning for the local governments concerned
   Inspections of rice shall be implemented per municipality before its shipment begins.
   In this case, the local governments concerned shall determine municipalities subject to inspections and
   the number of the inspections, by taking into account the outcomes of investigations implemented prior
   to the harvesting of rice with consideration for the concentrations of cesium in soil and the results of
   environmental monitoring inspections.

2. Requirements for establishing items and/or areas to which the government imposes restrictions of
   distribution and/or consumption
   The restrictions of distribution and/or consumption can be established by unit with a clear geographical
   scope, such as municipalities or, former municipalities, if such restrictions can be administered by
   prefectures and municipalities.

3. Cancellation of items and/or areas to which the government imposes restrictions of distribution and/or
   consumption
   The restrictions of distribution of rice produced in fiscal year 2011 shall not be cancelled.
This page intentionally left blank
<table>
<thead>
<tr>
<th>Date</th>
<th>Area</th>
<th>Restrictions</th>
</tr>
</thead>
</table>
The instructions associated with food by Director-General of the Nuclear Emergency Response Headquarters
(Restriction of distribution in prefectures other than Fukushima Prefecture)

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Restrictions (As of 29 Aug 2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibaraki Prefecture</td>
<td>Spinach (3/21~4/27)</td>
</tr>
<tr>
<td></td>
<td>Non-head type body vegetables</td>
</tr>
<tr>
<td></td>
<td>Parsley (3/21~4/17)</td>
</tr>
<tr>
<td></td>
<td>Kakina (3/21~4/17)</td>
</tr>
<tr>
<td></td>
<td>Leafy vegetables, e.g. spinach</td>
</tr>
<tr>
<td></td>
<td>Tomatoes (3/23~4/17)</td>
</tr>
<tr>
<td></td>
<td>Celery (6/2~8/29)</td>
</tr>
<tr>
<td></td>
<td>Oyster (3/21~4/17)</td>
</tr>
<tr>
<td></td>
<td>Others (6/2~8/29)</td>
</tr>
<tr>
<td>Tochigi Prefecture</td>
<td>Beef (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Other meats (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Chickens (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Rabbits (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Pigs (3/21~4/8)</td>
</tr>
<tr>
<td>Chiba Prefecture</td>
<td>Spinach (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Non-head type body vegetables</td>
</tr>
<tr>
<td></td>
<td>Parsley (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Kakina (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Leafy vegetables, e.g. spinach</td>
</tr>
<tr>
<td></td>
<td>Tomatoes (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Celery (6/2~8/29)</td>
</tr>
<tr>
<td></td>
<td>Oyster (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Others (6/2~8/29)</td>
</tr>
<tr>
<td>Gunma Prefecture</td>
<td>Spinach (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Non-head type body vegetables</td>
</tr>
<tr>
<td></td>
<td>Parsley (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Kakina (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Leafy vegetables, e.g. spinach</td>
</tr>
<tr>
<td></td>
<td>Tomatoes (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Celery (6/2~8/29)</td>
</tr>
<tr>
<td></td>
<td>Oyster (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Others (6/2~8/29)</td>
</tr>
<tr>
<td>Tochigi Prefecture</td>
<td>Beef (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Other meats (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Chickens (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Rabbits (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Pigs (3/21~4/8)</td>
</tr>
<tr>
<td>Chiba Prefecture</td>
<td>Spinach (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Non-head type body vegetables</td>
</tr>
<tr>
<td></td>
<td>Parsley (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Kakina (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Leafy vegetables, e.g. spinach</td>
</tr>
<tr>
<td></td>
<td>Tomatoes (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Celery (6/2~8/29)</td>
</tr>
<tr>
<td></td>
<td>Oyster (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Others (6/2~8/29)</td>
</tr>
<tr>
<td>Gunma Prefecture</td>
<td>Spinach (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Non-head type body vegetables</td>
</tr>
<tr>
<td></td>
<td>Parsley (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Kakina (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Leafy vegetables, e.g. spinach</td>
</tr>
<tr>
<td></td>
<td>Tomatoes (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Celery (6/2~8/29)</td>
</tr>
<tr>
<td></td>
<td>Oyster (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Others (6/2~8/29)</td>
</tr>
<tr>
<td>Chiba Prefecture</td>
<td>Spinach (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Non-head type body vegetables</td>
</tr>
<tr>
<td></td>
<td>Parsley (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Kakina (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Leafy vegetables, e.g. spinach</td>
</tr>
<tr>
<td></td>
<td>Tomatoes (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Celery (6/2~8/29)</td>
</tr>
<tr>
<td></td>
<td>Oyster (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Others (6/2~8/29)</td>
</tr>
<tr>
<td>Gunma Prefecture</td>
<td>Spinach (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Non-head type body vegetables</td>
</tr>
<tr>
<td></td>
<td>Parsley (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Kakina (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Leafy vegetables, e.g. spinach</td>
</tr>
<tr>
<td></td>
<td>Tomatoes (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Celery (6/2~8/29)</td>
</tr>
<tr>
<td></td>
<td>Oyster (3/21~4/8)</td>
</tr>
<tr>
<td></td>
<td>Others (6/2~8/29)</td>
</tr>
</tbody>
</table>
## The instructions associated with food by Director-General of the Nuclear Emergency Response Headquarters (Restriction of consumption in Fukushima Prefecture)

**As of 29 Aug 2011**

<table>
<thead>
<tr>
<th>Restriction of consumption</th>
<th>Fukushima prefecture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>whole area</strong></td>
<td></td>
</tr>
<tr>
<td>3/23~5/11</td>
<td>Shindo-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
<tr>
<td>3/23~6/11</td>
<td>Fukushima-shi, Nihonmatsu-shi, Date-shi, Motomiya-shi, Kori-machi, Kunimi-machi, Kawamata-machi (excluding Yakamiya area), Otama-mura.</td>
</tr>
<tr>
<td>3/23~5/25</td>
<td>Shinjo-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
<tr>
<td>3/23~6/15</td>
<td>Shinjoy-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
<tr>
<td>3/23~5/18</td>
<td>Shinjoy-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
<tr>
<td>3/23~5/25</td>
<td>Shinjo-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
<tr>
<td>3/23~5/11</td>
<td>Shinjoy-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
<tr>
<td>3/23~5/25</td>
<td>Shinjo-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
<tr>
<td>3/23~5/11</td>
<td>Shinjoy-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
<tr>
<td>3/23~5/25</td>
<td>Shinjo-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
<tr>
<td>3/23~5/11</td>
<td>Shinjoy-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
<tr>
<td>3/23~5/25</td>
<td>Shinjo-machi, Soma-shi, Minamisoma-shi (excluding area within 20 km radius from the TEPCOs Fukushima Daiichi Nuclear Power Plant and Planned Evacuation Zones).</td>
</tr>
</tbody>
</table>

### Instructions still imposed are expressed in Italic type.

- *fishery product*
  - sand lance (juvenile): 4/20~

---

**Note:** Instructions associated with food by Director-General of the Nuclear Emergency Response Headquarters (Restriction of consumption in Fukushima Prefecture) as of 29 August 2011. The instructions are categorized by food type and area. Each entry includes the area affected and the dates of restriction. Instructions still imposed are expressed in Italic type for emphasis. The document outlines the restrictions on consumption in different parts of Fukushima Prefecture, including specific towns and municipalities. The restrictions vary based on the proximity to the TEPCO's Fukushima Daiichi Nuclear Power Plant and other evacuation zones. The document highlights the importance of monitoring and adapting to the changing circumstances due to the nuclear crisis. The precise details of the restrictions are critical for public health and safety during and after the crisis.