

## Be informed, be prepared. The Nuclear Disaster **Prevention Handbook**

I should start talking to my family about what to do in a critical situation

If I can tell a disaster has happened. I need to go get my children right away!

They say it's safer to stay inside instead of running off somewhere far away.

Special

publication Revised Feb 202 In the unlikely event of a nuclear disaster, find indoor shelter within a safe location and obtain further information.

#### Introduction

This easy to understand handbook covers the fundamentals about radiation and nuclear power, as well as preventative measures against nuclear disaster.

Genkai Town, Imari City and Karatsu City in Saga Prefecture fall within the 30km radius Nuclear Disaster Prevention Priority Zone of the Genkai Nuclear Power Plant. For this reason, the Prefecture has drawn up plans to reduce disaster risk in the region, including countermeasures against nuclear disaster in the unlikely event of a nuclear incident. Each city and town also has formulated disaster prevention measures and evacuation plans, which are also outlined within this guide. Furthermore, the national government and associated agencies have established a council that determines what steps should be taken in case of an emergency.

Additionally, in order to increase the effectiveness of these plans, we hold annual nuclear emergency response exercises to develop a better understanding of, and improve the ability to respond to nuclear incidents. We revise these plans as needed and we reinforce our disaster prevention system by using the lessons learned during our training. We hope the residents of Saga Prefecture, as well as those commuting to work and school here, will make use of this handbook and always keep it on hand just in case. In a disaster situation, you will only be able to do the things you've practiced and learned in drills. Consider getting involved with disaster prevention drills in your area.

### **Table of Contents**

1. What is a Nuclear Disaster? ·····P1
2. Radiation, Radioactivity & Radioactive MaterialsP2
3. Saga Prefecture Nuclear Disaster Prevention Priority Zone P3
4. Outline of Nuclear Disaster Countermeasures·····P4
5. When Should I Shelter Indoors or Evacuate?P6
6. Important Points to Remember During a Nuclear Disaster P8
7. If Told to Shelter Indoors P9
8. If You Need to Evacuate P10
9. Where Will I be Evacuated to?P11
10. Where Does My Evacuation Route Go? ······P12
11. Medical Services During an EmergencyP13
12. What to Do in a Simultaneous Earthquake and Nuclear DisasterP16
13. Evacuation in Event of a Nuclear Incident During a Pandemic P17
14. Always be Prepared & Learn from Past Disasters

## What is a Nuclear Disaster?

We can define a nuclear disaster as damage caused by the abnormal emission of radiation or radioactive material resulting from an accident, etc. at a nuclear facility.

#### Characteristics of a nuclear disaster

Unlike storms, floods damage, earthquakes, fires and so forth, a nuclear disaster has no discernible smells or visual warnings and such that we can detect with our five senses.

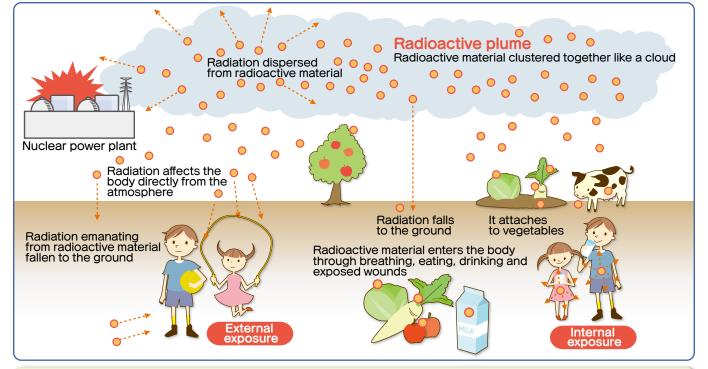
In order to cope with this kind of emergency, it is vital to have the correct information about radiation and radioactive material and follow the instructions provided by the national government, prefecture and municipalities rather than taking action on your own. Above all else, stay calm.

#### What happens if a nuclear disaster occurs?

Should an incident occur at a nuclear power plant, radioactive material may be released into the surroundings.

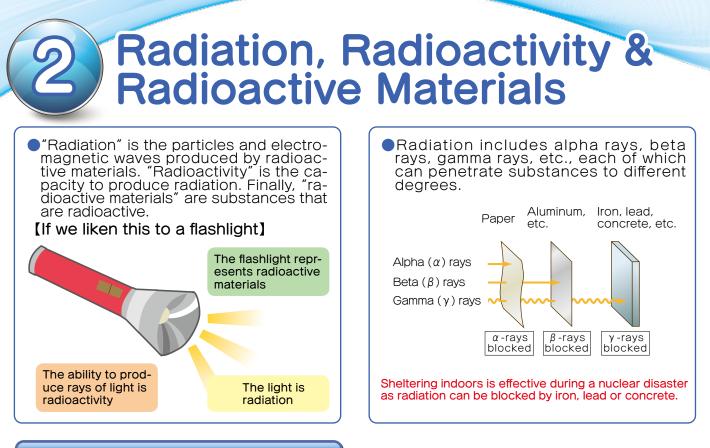
This radioactive material forms something like a cloud (or "radioactive plume") and begins to spread.

[Depiction of a disaster developing] \* In reality, radioactive material and radiation are invisible to the eye



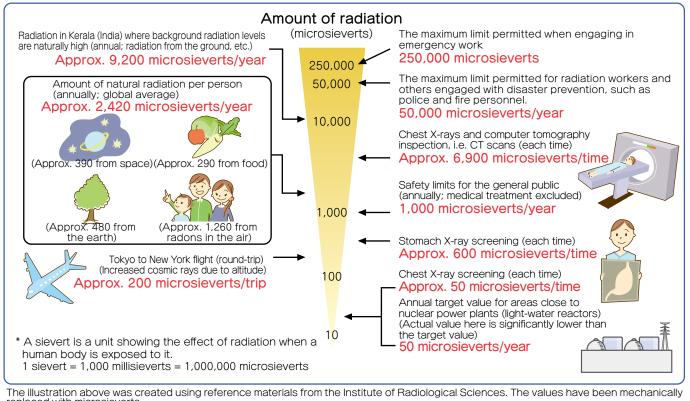
The difference between "exposure" and "contamination"

Exposure : A person or animal is subject to radiation Contamination : Radioactive material adheres to skin or clothing. Exposed skin and clothing may be washed or wiped to remove radioactive materials (decontamination).



#### **Daily life and radiation**

We receive radiation from nature in our everyday lives. We are also exposed to radiation during medical tests and treatments for diseases.



	500 microsieverts/hour	People are ordered to evacuate within one day
during a nuclear disaster	20 microsieverts/hour	People are ordered to evacuate within a week

## **Saga Prefecture Nuclear Disaster** Prevention Priority Zone

The following nuclear disaster response guidelines for the Prefecture are based on policies formulated from the Fukushima Daiichi Nuclear Power Plant Disaster and international standards. They are to be mainly implemented in a specific zone, as illustrated below.

This zone includes Genkai Town, Karatsu City and Imari City, for which nuclear disaster evacuation plans have been developed.

Zone designed for precautionary protective measures (Precautionary Action Zone) The area within a roughly **5km radius** from the nuclear power plant. In the event of a nuclear power plant incident, this zone allows for immediate evacuation before radioactive material is released into the atmosphere Target Regions Hokawazu, Chikagawachi, Shimomiya, Nakadori, Karidachi, Fuonii, Sea Line Town, Hirao, Hamanoura, Kogakura, Sakae, Hananoki, Ozono, Kariya, Ishida Hizenmachi (Kyodomari) 、 Chinzeimachi (Onigi, Ichido, Nomoto, Motogumi, Akaneyamachi, Hatakenaka, Sako, Mugiwara, Sakube, Urakata, Tonoyama, Sakigata, Furusato, Nakamachi, Amamachi, Kushi, Maeda, Takenouchi, Yokotake, Ishimuro), Yobukocho (Tononouranishi, Katashima, Kabeshima) Citv Zone designed for emergency protective measures (Urgent Protective action planning Zone) JP7 The area roughly **5km-30km** from the nuclear power plant. Zone designed for safe transition to indoor shelter and evacuation according to the radiation levels in each region Zone designed for evacuation planning ahead of nuclear disasters The UPZ target region covers all of Genkai Town, Karatsu City and Imari City (excluding the PAZ) PAZ

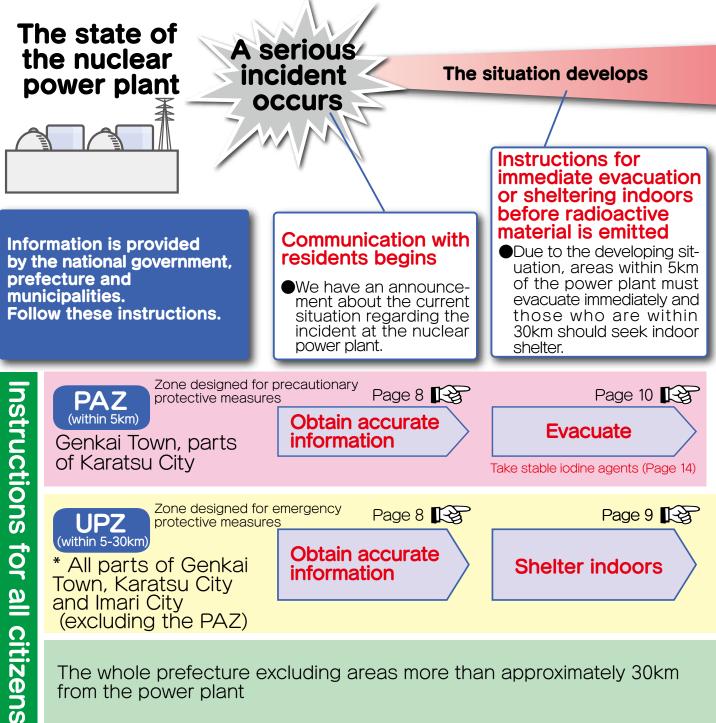


3

## **Outline of Nuclear Disaster** Countermeasures

#### This is mportant! - Calmly handle the situation as it develops

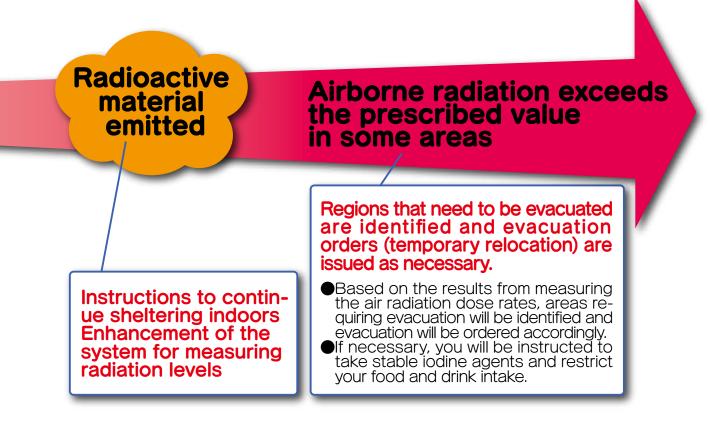
In a nuclear disaster, it is more important than anything to protect yourself from radiation and radioactive material. In the event of a serious accident at a nuclear power plant, stay calm and follow the instructions provided by the national government, prefecture and municipalities rather than taking action on your own.

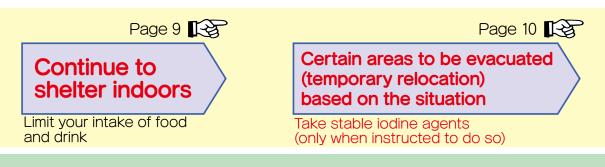


The whole prefecture excluding areas more than approximately 30km from the power plant

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The four important points to remember in order to protect yourself in a nuclear disaster are: (1) obtain accurate information (2) know whether people in your zone should evacuate the area or shelter indoors (3) continue to shelter indoors (4) be aware that certain zones will be evacuated (temporary relocation), according to the situation.





We will provide instructions as required for indoor shelter and evacuation, following the same procedures as the protective measures zone (UPZ). Please listen carefully to this information.

# **5** When Should I Shelter Indoors or Evacuate?

If there is an incident at the nuclear power plant, the national government will consider:

**1**The situation at the nuclear power plant

2 Whether or not radioactive material has been emitted

**3**If radiation readings are abnormal

Then decide if the ongoing incident requires protective measures, such as sheltering indoors or evacuation.

#### Evacuation due to the developing situation at the nuclear power plant

#### The state of emergency is classified according to the situation at the power plant

Danger level class	sification	PAZ (within 5km of incident)	UPZ (5-30km from incident)
Alert Not an emergency, but an abnormal event has occurred or could occur	Example: Genkai Town (where the nuclear power plant is located) has experienced an earth- quake with seismic intensity of 6 or higher.	Preparation for Per- sons in need of evac- uation in event of a site area emergency*	
Site Area Emergency Radioactive material could be released out- side of the nuclear power plant	Example: Large quantities of nuclear reactor cool- ant are leaking and there is no immediate way to flood the reac- tor with water to sup- press the temperature.	<ul> <li>Enforced evacuation of persons in need of evacuation in event of a site area emergency*</li> <li>Preparation for evacuation of ordinary residents</li> <li>Preparation for taking stable iodine agents</li> </ul>	Preparation for shel- tering indoors
General Emergency Radioactive material could be released out- side of the nuclear power plant	For example: The reactor's fuel rods are damaged.	<ul> <li>Enforced evacuation for all inhabitants</li> <li>Taking stable iodine agents</li> </ul>	<ul> <li>Enforced indoor shel- ter</li> <li>Preparation for evacu- ation</li> </ul>

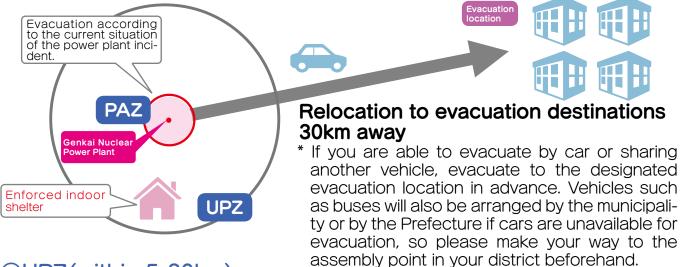
\* Persons in need of evacuation in event of a site area emergency: Elderly or physically impaired, etc. who need more time evacuate and whose health risk would not be worsened by evacuating. Also, people unable to take stable iodine agents.

Nuclea power		Normal Circumstances	Alert	Site Area Emergency	General Emergency	General En	nergency
Radioa materia emitteo	al			No	)	Yes (Exposure & cor	
	PAZ	Residents requiring assistance	Evacuation preparation	Evacuation			
Resid- ents	(approx. 5km)	Ordinary residents		Evacuation preparation	Evacuation		
	UPZ (5-30km)		(Preparation for sheltering indoors)	Sheltering indoors (prepa evacuation / temporary r	eparation for beaution depending on situation		

#### Differences between evacuating the PAZ (within 5km) and UPZ (within 5-30km)

#### OPAZ(within 5km)

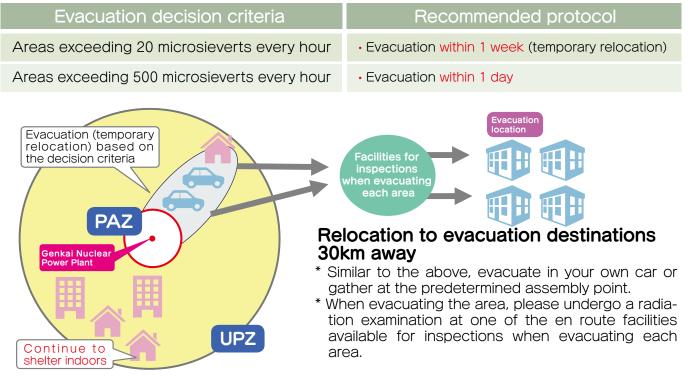
The PAZ (within 5km) will be evacuated as a precaution prior to emission of radioactive material from the nuclear power plant.



#### OUPZ(within 5-30km)

The following factors will determine whether evacuating the UPZ (within 5-30 km) itself and regions outside the zone is necessary if radioactive material is emitted. This is based on the measurements of airborne radiation in each region, meaning some areas will be evacuated and others will be given orders to shelter indoors.

#### Criteria to determine evacuation of UPZ (within 5-30km)



#### Residents living over 30km away

·Shelter indoors if required

•Evacuation (temporary relocation) required if the airborne radiation level exceeds the standard value.

## **6** Important Points to Remember During a Nuclear Disaster

Information about the situation will be widely broadcast via TV, radio, official disaster prevention radio channels, cable broadcasting and from PR vehicles.

Sometimes incorrect information spreads. It is therefore important to calmly await correct information and instructions from official sources.

#### What should I do if I hear an incident has occurred?



#### Watch out for rumors and misinformation!

Be sure to follow the information provided by the national government, prefecture and municipalities via television, radio and the internet, and act accordingly. Information will also be available

on the disaster prevention site "Bousai Net An-an".



Collect children if a state of alert is issued

Children who are in nursery schools, kindergartens, schools or in after-school clubs should be collected promptly according to the instructions and rules provided.



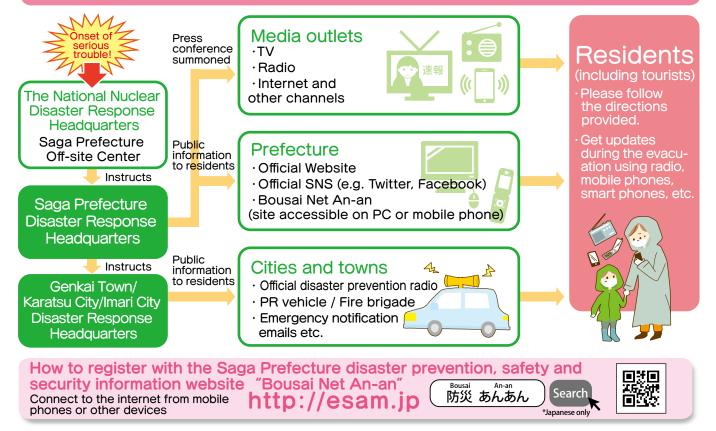
Ensure other residents nearby are informed

It's especially important to reach out to the elderly and physically impaired.



Avoid panic and act calmly Calmly follow any instructions given by police officers and municipal employees on roads or in crowded areas.

#### How is information communicated during a crisis?



## 7 If Told to Shelter Indoors

When directed to take indoor shelter, stay inside the building (your home, etc.) and close all doors and windows. Buildings are relatively airtight and provide a shielding effect, so sheltering indoors reduces exposure to radiation.

\* Concrete buildings are more protective against radiation than wooden buildings.
\* Air conditioners that do not take in outside air can also be used while sheltering

indoors. Check to see what type of air conditioner is installed at home first.

Staying indoors is the first step to staying safe!



## If You Need to Evacuate

In the event of evacuation (temporary relocation), calmly prepare and listen to the information given, then evacuate to the designated location (evacuation destinations).

Act calmly during the emergency!



#### Obtain accurate information

Evacuation instructions will be provided by means of TV and radio, as well as official disaster prevention radio and PR vehicles from the prefecture and municipalities (Page 8) Get details about the evacuation process.



Turn off the gas and all electrical outlets

Do not forget to close your doors.



Protect yourself from radioactive material

To avoid ingesting radioactive contaminants during evacuation, make sure to wear clothes you can take off easily, and cover your nose and mouth with a mask or wet handkerchief.

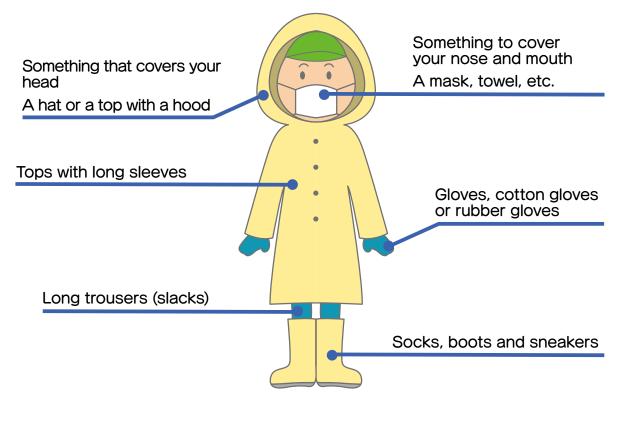


Use your own car or take a bus to evacuate

In addition to evacuating by car, those without access to a car can meet at an assembly point to take a bus arranged by the prefecture or municipality. Also reach out to neighbors in times of evacuation.

#### OClothing to wear during evacuation

Do your best to wear clothes that fully cover the skin, such as the following.



## Where Will I be Evacuated to?

Predetermined evacuation plans (assembly points, evacuation destination & evacuation routes) for Genkai Town, Karatsu City and Imari City, which are located within 30km of the Genkai Nuclear Power Plant, can be found below. These guidelines are based on the Fukushima Daiichi Nuclear Power Plant Disaster and adjusted to the requirements of each municipality.

These evacuation plans will continue to be reviewed and improved for future use.

		(Current as of February 2021)
Cities and	towns 📃	Evacuation location
Genkai 1	Fown 🗕	Ogi City
	Chinzei machi	Kohoku Town, Shiroishi Town
	Yobuko cho	Ogi City, Shiroishi Town
	Hizen machi	Omachi Town, Shiroishi Town
	Former Karatsu	Saga City, Tosu City, Taku City, Ogi City, Kanzaki City, Yoshinogari Town, Kamimine Town, Miyaki Town
Karatsu City	Hamatama machi	Tosu City, Kiyama Town
	Kitahata	Ogi City
	Ochicho	Saga City
	Nanayama	Kanzaki City
	Kyuragi machi	Saga City
Imari	City	Takeo City (Okawachi town[Iwaya, Ichiyama, Shorikibo], Kurogawacho, Hatatsucho, Minamihatacho, Higashiyamashirocho), Kashima City (Tachibana district, Okawacho), Ureshino City (Okawachi town [excluding Iwaya, Ichiyama, Shorikibo], Matsuuracho, Niricho), Arita Town (Imari district, Makishima district), Tara Town (Otsubo district)
	nd on the res	s for each municipali- spective websites for 〇〇市 / 町 原子力 避難計画 and Imari City.
Karatsu City		Phone:0955-52-2115 Fax:0955-52-5008 Agement and Phone:0955-72-9260 Fax:0955-72-9170

#### **Medical & welfare institutions**

There are evacuation plans for the respective medical & welfare institutions in Genkai Town, Karatsu City and Imari City. Please contact the required institution for further details.

Imari City Hall Disaster Crisis Management Division Phone:0955-23-2130 Fax:0955-22-8684

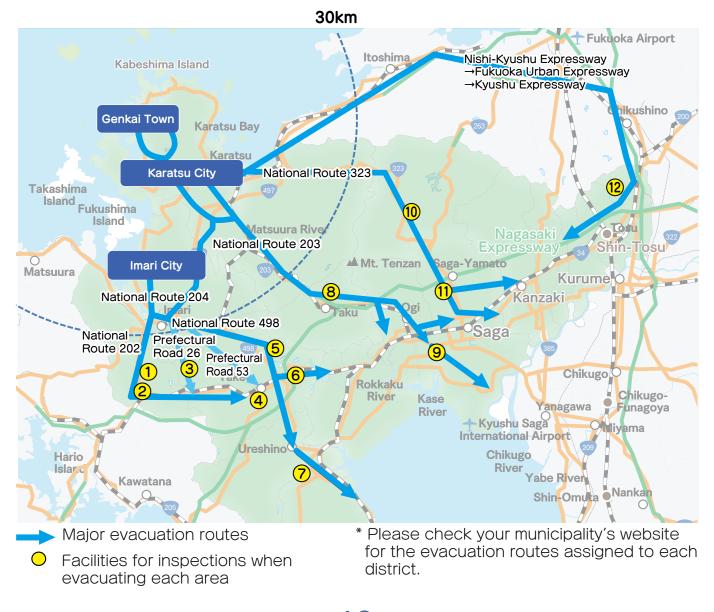
### **10** Where Does My Evacuation Route Go?

Major evacuation routes in a nuclear disaster

#### OLearn your assigned evacuation city/town and route ahead of time.

Major evacuation routes are planned with the aim of reaching a safe distance from the nuclear power plant quickly and while avoiding confusion. During a nuclear disaster, police and other staff will be placed at intersections along major evacuation routes to direct traffic.

\* If you are evacuating via Fukuoka Prefecture and local or traffic information indicates heavy congestion or predicts traffic jams, you will be diverted to major highways in Saga Prefecture (National Route 323 or 203, etc.). In this situation, you will be informed via emergency update emails.



12

### **Medical Services During** an Emergency

#### Inspections when evacuating each area

 Inspection facilities will be set up along evacuation routes for residents of the UPZ (within 5-30km of incident) if told to evacuate.

 Inspection facilities will check whether cars, clothing, or other items are contaminated with radioactive materials. Please make sure to undergo an inspection during the evacuation process.
 People found to exceed the standard value for exposure will be subject to simple decontamination.

•Once inspection and simple decontamination are complete, you will be given a transit certificate. After you have received this, please proceed to an evacuation shelter or other destination.

#### Facilities for inspections during evacuation (1)2 3 (4) rther Is there Is there Is there radioactive tation to a medical YES YES YES YES decontamination material on material present material on the car? the car occurepresenta inst NO NO NO NO Continue on to the evacuation shelter etc.

\* If the level is still higher than the standard value after simple decontamination Affected people → decontaminated at specialized medical institutions like the Saga-ken Medical Centre Koseikan or inspection facilities equipped with running water for decontamination. Vehicles and baggage → held temporarily at the inspection facility.

#### List of inspection facilities when evacuating each area (the numbers correspond to the locations shown on the map on Page 12)

- 1 Arita Chuo Park (Arita Town, National Route 202)
- Parking lot adjacent to Rekishi to Bunka no Mori Park (Arita Town, National Route 202)
- 3 Former Yamauchi Office
- (Takeo City, National Route 35)
- 4 Shiraiwa Athletic Park (Takeo City, National Route 34)
- 5 Kito Clean Center (Takeo City, National Route 498)
- 6 Former Kitagata Office Faculty Parking Lot
- (Takeo City, National Route 34)

- 7 Gibizan Park (Kashima City, National Route 207)
- 8 Taku City Athletic Field (Taku City, National Route 203)
- 9 Saga Pref. Shinrin Park (Saga City, National Route 207)
- 10 Saga City Hall Fuji Office (Saga City, National Route 323)
- (Saga City, National Route 263)
- 12 Kiyama Sogo Park (Kiyama Town, Prefectural Road 17)
- \* This information is true at the time of writing. Any changes after February 2021 will be announced through sources such as the Saga Prefecture website.

#### Stable iodine agents as preventive medicine

Radioactive iodine can be released into the atmosphere during a nuclear disaster.

If this radioactive iodine is absorbed in large quantities through breathing, eating and drinking, it will collect in the thyroid gland. After several years or decades, the resulting internal exposure can lead to thyroid cancer.

However, by taking non-radioactive stable iodine agents (po-

tassium iodide) in advance, you can prevent radioactive exposure to the thyroid. ·Stable iodine agents have a limited period of effect. Therefore, it is vital to take them as instructed

and at the appropriate time when evacuating or relocating.

•Stable iodine agents are only effective against radioactive iodine and no other radioactive materials.

•After taking an iodine agent, continue to follow protective measures such as evacuating or sheltering indoors.

#### Taking stable iodine agents

The National Nuclear Regulation Authority will decide whether you should take stable iodine agents, in accordance with evacuation instructions.

You must only take the recommended dosage. (Taking more iodine does not increase the efficacy)

·Do not take multiple doses unless specifically instructed to do so.

#### <Dosage Guidelines>

Note:

Adults (ages 13 and above) 2 pills of potassium iodide

Children (aged 3 to below 13) 1 pill of potassium iodide

32.5mg of potassium iodide oral jelly Infants (1 month to below 3 years old)

16.3mg of potassium iodide oral jelly (Potassium iodide oral jelly)

Newborns (below 1 month)

#### Read before taking

The younger you are, the greater risk you have of developing diseases such as thyroid cancer following internal exposure to radioactive iodine. Minors and women who are pregnant or breastfeeding are prioritized for administration of stable iodine, so please take it without hesitation when instructed.

Since it is administered orally in a single dose, the probability of side effects is low.

•Do not take if you have a history of hypersensitivity to the components of stable iodine agents or iodine.

Consult a doctor before taking if you have history of hypersensitivity to iodine-based contrast dve.

·If you are pregnant or breastfeeding, please notify your doctor or pharmacist if you have taken a stable iodine agent.

#### How stable iodine agents will be distributed

PAZ (within 5km) residents

UPZ (within 5-30km) residents

As a general rule, stable iodine will be provided to you in advance if you are under 40 years old, so please attend the mandatory distribution meeting. (It is also available to those over 40 upon request.) Medication will be stockpiled in local schools and government buildings, and then distributed when needed in Genkai Town, Karatsu City and Imari City at designated locations. (See next page for details)



(Potassium iodide pills)

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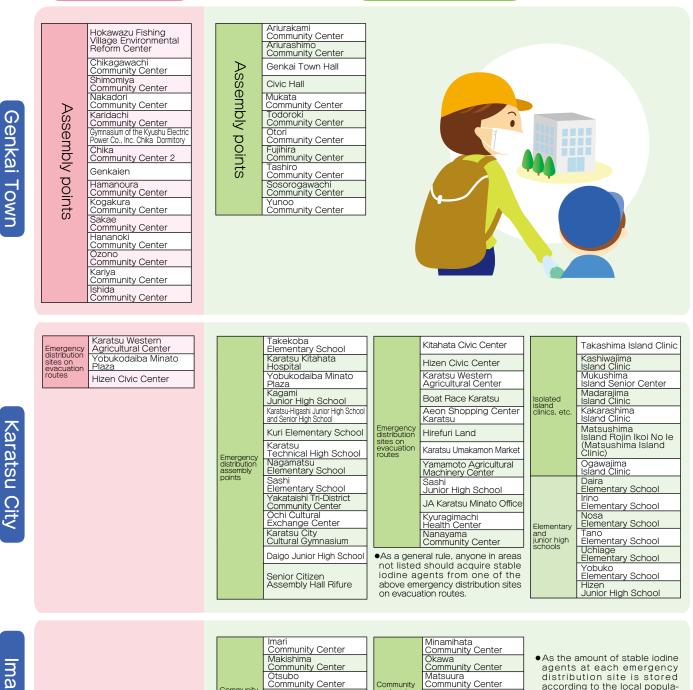


#### Emergency distribution sites for stable iodine agents in the PAZ and UPZ

#### PAZ (within 5km of incident)

#### UPZ (within 5-30km of incident)

(Current as of February 2020)



lmari City

Kurokawa Elementary and Junior high	Community Center Community Center Schools in Imari City hold a	Community Center Hatatsu Community Center City Hall City Hall Imari City Hall	Community centers in each town	Community Center Okawachi Community Center Kurokawa Community Center	Community centers in each town	Community Center	<ul> <li>As the amount of stable iodine agents at each emergency distribution site is stored according to the local popula- tion, please travel to the loca- tion closest to home.</li> <li>* Elementary and junior high schools in Imari City hold a separate supply for students.</li> </ul>
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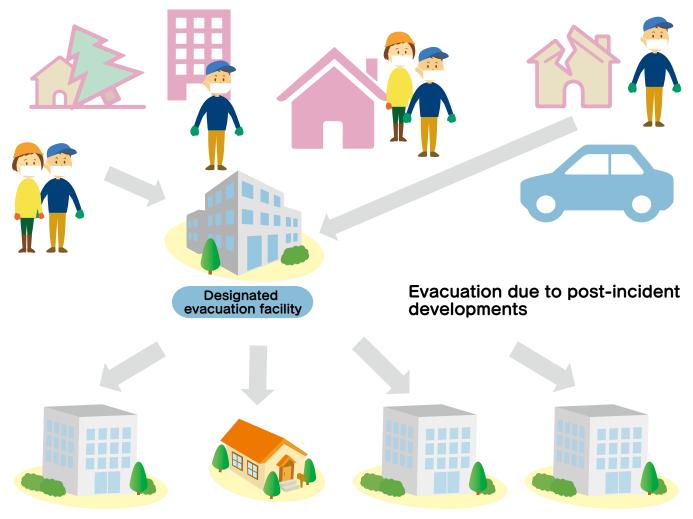
- Stable iodine agents will generally be distributed in advance in the PAZ, but additional supplies will be given to people who have lost their stable iodine agents or been evacuated directly, as well as anyone staying temporarily, such as tourists.
- Stable iodine agents can also be provided at inspection facilities when evacuating each area (Page 13), to people who could not obtain it from a location above.
- This information is true at the time of writing. Any changes after February 2021 will be announced through sources such as the Saga Prefecture website.

### What to Do in a Simultaneous Earthquake and Nuclear Disaster

#### Olf your home is damaged

If your home sustains damage from an earthquake, first, proceed to the designated shelter in your vicinity.

Should a subsequent nuclear power plant incident occur, the National Government will decide and announce safety measures, such as indoor shelter or evacuation, depending on the situation. (Page 6 (1))



#### Evacuation facilities for each region (Page 11

#### Olf you cannot use an evacuation facility

If the assigned shelter (Page 11 🖙) is unavailable due to earthquake damage, etc., then, in order to facilitate evacuation and temporary relocation quickly and effectively in a nuclear disaster, the Prefectural Disaster Response Headquarters will liaise with the evacuating municipalities and the refuge municipalities, and then decide on an alternative evacuation destination and inform those affected.

## **13** Evacuation in Event of a Nuclear Incident During a Pandemic

#### Olf you are able to, take the following measures when evacuating

- •Thoroughly disinfect your hands and wear a mask.
- Maintain social distancing when at temporary assembly points, on evacuation buses, and at evacuation centers.
- Avoid the "Three C's" (Crowded places, close-contact settings and confined and enclosed spaces)





Depending on the circumstances of the nuclear incident, evacuating may be more important than protecting against infection. In this case, take action to evacuate even if measures against infection are insufficient, prioritizing actions to protect life and ensure safety.

## Always be Prepared & Learn from Past Disasters

Being prepared saves lives.

It's good to make a habit of thinking, "How would I escape if at home? If outside? If I were alone?"

#### Disasters are a "personal matter"

In Japan, there is no way to know where or when the next flood, earthquake or tsunami will be.
However, experiences and memories of disasters are quickly forgotten.
And thus, victims of a disaster always say "This can't be happening here."

#### First and foremost, protect your own life

Always be ready to protect yourself when the worst happens, and act without hesitation.
 To do so, you need the determination to run and be saved.

#### Helping others around you

- •The elderly and physically impaired will always be slower to escape in a disaster.
- Long-term evacuation can also adversely affect one's health.
- Treat local connections with importance and cooperate in times of difficulty.



#### 17



For inquiries about this pamphlet contact: -

