Section 2 : Points of concern to be taken into account for fire fighting and rescue activities at nuclear power facilities, etc.

2 - 1 General activities

2 - 1 - 1 General rules

In the event of an accident such as a fire at a nuclear power facility, the fire department must deal with it according to the main points described in clause 2-1-3 and the following clauses, assuming that the accident involves a leak of radioactive substance or a release of radiation at some level, and that it is not known whether the accident will lead to a specified event or not.

If it becomes clear that the accident will not lead to a specified event, the fire department will, as a general rule, alter its activities to meet the main points of normal fire fighting activities. However, if fire fighters will be engaged in activities in an area close to the source of the leak of a radioactive substance or the release of radioactive rays, they shall deal with the situation according to the main points described in clause 2-1-3 and the following clauses.

2 - 1 - 2 Measures for dealing with accidents in the initial stage (Initial measures to be performed by nuclear power corporations in case of danger)

It is stipulated by the ordinance of the competent ministry based on Clause 1, Article 64 of the Nuclear Reactor Regulation Law that, in the event of accidents at nuclear power facilities, the nuclear power corporations shall take the following initial measures:

(1) If a fire occurs in a facility which uses nuclear fuel or may spread to such a facility, immediately report it to a fire department while making efforts to fight the fire or prevent the spread of the fire.

(2) If there is sufficient time and room to remove the nuclear fuel material to another place, move it to a safe place, as necessary, secure the area with a rope and signs, and post a guard to prevent people from entering the area.

(3) In order to avoid generating radiation hazards, evacuate people in the nuclear fuel facility and surrounding areas, as necessary.

(4) In the event of contamination from nuclear fuel material, take immediate actions to prevent the spread of contamination and removed pollutants.

(5) If anyone has suffered or may have suffered radiation exposure, rescue them immediately and take measures to evacuate them from the area, etc.

(6) Take other measures necessary to prevent radiation hazards.

2 - 1 - 3 Collecting information when receiving a report

When receiving a report on an accident, etc. from a nuclear power facility, information must be collected on the following items:

(1) Time of occurrence
(2) Type of fire, etc. (Fire, Explosion, Leak of radioactive substances (radioactive rays), etc.)
(3) Existence or nonexistence of victims to be rescued, radiation exposure, and radioactive contaminants
(4) Place of fire, etc. (Name of facility)
(5) Name of the entrance of the facility, or the name of the facility and/or the name of the person in charge of guidance; where fire fighting and rescue teams should be dispatched
(6) Existence or nonexistence of radiation exposure and/or radioactive contaminants in the area where fire fighting and rescue activities will be performed
(7) Condition of any burning materials, the fire, etc.
(8) Existence or nonexistence of the danger of the fire spreading within or beyond the controlled area
(9) Degree of the radiation dose rate
(10) Existence or nonexistence of a danger of radiation spread
(11) Condition of any protection measures, fire extinguishing, etc. which have already been performed by the nuclear power corporation
(12) Condition of the fire fighting equipment provided and used at the site
(13) Condition of the measuring equipment which can be used by the fire fighting teams
(14) Any other information which may influence the fire fighting activities
(15) Name, position, telephone No. of the person who reported the accident

In addition, when receiving a report, the fire department must check the condition of measures already taken by the facility in respect to the items described below, and if no measures have yet been taken for some items, the fire department should ask the facility

to take appropriate measures, as necessary. The fire department should also transfer the information from the nuclear power corporation to the fire fighting team.

(1) The fire department must be ready to transfer the information required for the prevention of radiation exposure to the fire fighting team on its arrival at the site, including information on the outline of the accident, the degree of the radiation dose, the situation of setting up a warning area, etc.

(2) If any of the victims have suffered or may have suffered radiation exposure, rescue them immediately and take measures to evacuate them from the source. At the same time, necessary measures should be taken including decontamination.

(3) Other necessary measures should be taken to prevent fire fighters from suffering radiation exposure, including the measurement of the radiation dose.

2 - 1 - 4 Actions in the event of mobilization

(1) In the event of accidents at nuclear power facilities, as a rule, the fire fighting team should be mobilized with protective equipment and materials against radiation, reference materials, etc.

(2) The team should maintain communication with the control station in order to properly monitor the situation.

(3) If there is a danger of contamination from radioactive materials, etc., the most suitable access route and treatment site for the mobilized fire engines should be determined by considering the direction of the wind, land features, etc. in order to avoid smoke, dust, etc. Depending on the situation, an alternative route should also be considered.

(4) If there is a danger of contamination from radioactive materials, etc., as a rule, the mobilized fire engines should cover the vehicle floor and any exposed on-board equipment and materials using water-proof sheets, etc. before leaving for or after arrival at the site. Only the minimum required equipment and materials should be taken to the site.

(5) Upon mobilization, the team should start radiation detection work using radiation meters. If it is found that the measurement values of the radiation meters suddenly rise on the way to the site, they should immediately evacuate to a safe place, and inform the headquarters; they must then wait for instructions on what to do next. (For information concerning radiation detection work after arrival at the site, refer to clause 2-1-7.)

2 - 1 - 5 Activities of the first team to arrive

a. The first team to arrive at the site must collect accurate, detailed information on the radioactive substances, etc. in order to prevent the spread of contamination as well as to secure the safety of rescue workers.

b. Protocols for collecting information are as follows.

(1) If any responsible personnel or experts of the facility are at the site, immediately collect information from them.

(2) If no responsible personnel or experts of the facility are at the site, collect information from other concerned personnel with sufficient knowledge.

(3) Information must be collected in a safe place, as designated by the responsible personnel of the facility.

(4) If the danger level of the radiation hazard is unknown, the team should evacuate to a safe area, such as an outside shelter, for example, behind a concrete wall located upwind.

c. The following information shall be collected:

(1) Condition of the building
① Access route to the accident site, escape route, etc.
② Places where water spraying and destruction are prohibited.
③ Restricted areas, and the reason for the restriction

(2) Outline of the accident
① Possibility of radiation exposure or contamination
② Possibility of the spread of contamination
③ Whether or not the fire or accident occurred in a facility handling nuclear fuel materials, or whether or not the fire may spread to a facility handling nuclear fuel materials.

(3) Situation of victims to be rescued
① The number of victims, and their location
② Condition of victims suffering radiation exposure, and the level of contamination

(4) Properties of radioactive substances
① Danger caused by flames or heat
② Water prohibitions or deadly poisonous
③ Effects to human health

(5) Measures already taken by the personnel of the facility
① Areas of radiation measurement, and the measurement results
② Outline of fire fighting and rescue activities
③ Condition of the removal of radioactive substances
If it is necessary to move radioactive substances, the team should request the facility to conduct this.
④ Condition of the setting up of the radiation hazard area

2 - 1 - 6 Setting up a command headquarters at the site, and the items to be controlled

With regard to the setting up of a command headquarters at the site and the items to be controlled, the following points need to be considered.

a. Standards for setting up a command headquarters at the site
(1) In the event that a fire is spreading throughout the controlled area
(2) In the event that a fire may spread to the controlled area
(3) If rescue work is required in the controlled area
(4) In the event that there are a number of victims to rescue
(5) If the head of the fire department gives their approval

b. Location for setting up the command headquarters at the site
(1) In anticipation of the release or diffusion of radioactive substances, set up the headquarters in a well-watered area, as far upwind as possible. In addition, if there is a fear of radiation exposure due to radioactive rays which have a high penetrating power such as gamma rays, neutron rays, etc., it is recommended to make use of concrete facilities, equipment and materials located at the site, etc. in order to provide a sheltering effect against radioactive rays.
(2) The headquarters should be located in a well-watered, elevated area, in order to prevent contamination due to contaminated water from fire fighting.

c. In order to seek advice and discussion on fire fighting activities, the following personnel should be included as members.
(1) Responsible personnel of the facility
(2) Experts

(3) Head of the self-defense fire fighting team

d. Items to be controlled

In the command headquarters at the site, the following items should be performed after discussion with the responsible personnel of the facility and the experts.

(1) Control information on protection activities against radioactive rays, and control activities of rescue workers
(2) Collaboration with the responsible personnel of the facility, etc.
(3) Detection of radioactive rays
(4) Setting up of the fire fighting warning area
(5) Setting up of the radiation hazard area
(6) Formation of the rescue workers team that will enter the site
(7) Management of the safety of rescue workers entering/exiting the facility
(8) Request for the responsible personnel to perform a contamination inspection and the decontamination for rescue workers
(9) Determination and application of measures for victims suffering radiation exposure
(10) Procurement of protection equipment, fire fighting equipment
(11) Control of public relations
(12) Request for dispatch of experts
(13) Control of communication with the relevant authorities
(14) Any other necessary items

2 - 1 - 7 Radioactive ray detection activities

In case of leaks of radioactive substances or radiation exposure as a result of accidents at nuclear power facilities, radioactive ray detection activities must be performed for the purpose of controlling the safety of rescue workers and the prevention of the spread of radioactive contamination.

Radioactive ray detection activities shall be started upon mobilization and continued until the end of all fire fighting activities. At the accident site, the following items should be performed.

(1) Through discussion with the responsible personnel of the facility and experts, the specific policy for the detection activities shall be determined. In this case, positive collaboration with the personnel of the facility should be maintained by receiving from the facility side the monitoring information and seeking instruction and advice for fire fighters during the detection activities, etc.

(2) As a general rule, detection activities should be performed by a team of two personnel – consisting of one person in charge of measurement and one person in charge of recording.
(3) The personnel must wear protective equipment against radiation, such as radioactive protective clothing, respiratory protective devices, individual alarm dosemeters, etc.
(4) In order to confirm the equipment is in good condition before use, check the battery of the radioactive ray measurement device and the individual alarm dosemeter.
(5) Place priority on the detection of radioactive rays in the areas of greatest importance for fire fighting activities.
(6) The person in charge of measurement shall read aloud the values indicated by the measurement device, while the person in charge of recording shall record the values on the radioactive ray measurement record sheet (Form 1 of Material 4), separating the values into their respective detecting positions.
(7) If any of the following situations occur during the detection activities, immediately evacuate the area and take the necessary measures, including reporting to the commander.
    ① The values of the radioactive ray measurement device suddenly increase.
    ② The device stops functioning.
    ③ The alarm of the individual alarm dosemeter sounds.
    ④ Any accident occurs, such as an injury.
    ⑤ Any other critical problems occur.

2 - 1 - 8 Setting up of the fire fighting warning area and the radiation hazard area

No. 1 : Setting up of the fire fighting warning area

Taking into account the opinions of the personnel of the facility concerning the radiation level and the possibilities of radioactive contamination, the fire fighting warning area shall be set up in order to secure the safety of residents, and establish an area for fire fighting activities at the site. In this case, the area should be set wide enough to allow for increased safety. Furthermore, as the fire fighting warning area must be set up promptly it is generally desirable to set up the area without waiting for the results of the "radiation detection activities", as described in clause 2-1-7.

The perimeter of the fire fighting warning area must be clearly indicated by stretching a rope around it and installing signs.

[Note] The fire fighting warning area must always be physically set up and clearly visible for the specified period of time. As such, the area cannot be established orally.

No. 2 : Setting up of the radiation hazard area, etc.

a. Setting up of the radiation hazard area

A radiation hazard area should be set up for all areas that meet the criteria described below.

The area should be set up sufficiently wide to ensure that it does not need to be expanded to allow for increased safety later, considering the risk of contamination. The size of the area can always be reduced later if it is found to be larger than necessary.

(1) The area designated after discussion of the information provided by the personnel of the facility
If no such personnel are at the site, designate the area after considering items (2) - (4)

(2) The area where radiation of 0.5mSv/h or over is detected.

(3) The area where the diffusion of radioactive substance is found or expected in the event of a fire

(4) The area where contamination due to smoke or water runoff is found or expected

In addition, the perimeter of the radiation hazard area must be clearly indicated by stretching a rope around it and installing signs.

b. Setting up of a standby station for replacement staff and the contamination inspection, etc.

In an area outside the radiation hazard area, a relay center for fire fighting activities should be set up, including a standby station for replacement staff.

As a rule, for the contamination inspection a contamination inspection room in the facility should be used. If such an inspection room is not available, discuss the matter with the personnel of the facility, and set up an inspection place near the perimeter of the radiation hazard area, or any other nearby suitable area that is capable of preventing the spread of contamination.

2 - 1 - 9 Entering the radiation hazard area and emergency evacuation

No. 1 : Formation of the team

If a radiation hazard area is set up, the commander should organize an activity team

according to the conditions, as described below:

(1) The team members should be selected from the rescue workers dispatched to the site, after considering the situation of the radiation hazard area. The number of personnel in the team must be 2 or more and the team must meet all the minimum requirements.

(2) Prepare replacement staff for activities, and try to reduce the exposure dose.

(3) The equipment and materials brought into the radiation hazard area should be limited to the minimum required.

(4) The team should be accompanied by personnel familiar with the building construction, radiation protection, fire extinguishing equipment, etc. in the facility.

No. 2 : Measures to be taken when entering the area

If it is necessary to enter the radiation hazard area for fire fighting and rescue activities, the commander should perform the following items:

(1) Confirmation of the radiation exposure management system (responsible personnel, etc.) and the method

The commander must check on the system and personnel in order to perform management of the exposure dose of the team members, the duration of activities, etc.

In this case, the commander should be in positive collaboration with the responsible personnel of the facility or the other personnel accompanying the team.

The table below shows the exposure dose limit and the setting values of the individual alarm dosemeter.

	Exposure dose limit	Setting value of the individual alarm dosemeter
Usual fire fighting activities	10mSv	Set the value below 10mSv
Emergency activities such as lifesaving	100mSv	Set the value between 30mSv and 50mSv
Repeated activities	The designated total amount for five years is 100mSv (However, it should not exceed 50mSv per year.)	Set the value to meet the conditions described in the middle column.

(2) Preparation of the team activity record sheet (Form 2 of Material 4)
(3) Preparation of the management sheet for radiation exposure of individual workers (Form 3 of Material 4)

(4) Preparation of the sheet describing the formation of the team entering the radiation hazard area (Form 4 of Material 4).
(5) Preparation of the activity record sheet of individual workers in the radiation hazard area (Form 5 of Material 4)
(6) Check the functions of the radioactive ray measurement device and the individual alarm dosemeter.
(7) Check that rescue workers wear a respiratory device or oxygen breathing apparatus, and check the pressure of the air tank.
(8) Check that rescue workers wear radioactive protective clothing and individual alarm dosemeters.
(9) Check the setting value of the individual alarm dosemeters.
(10) Check that rescue workers carry radioactive ray measurement devices and all other necessary items.

No. 3 : Emergency evacuation from the radiation hazard area

The rescue team leader shall evacuate the team from the radiation hazard area in the event of the following situations:

(1) When the rescue team reports the occurrence of the following events:
① The value of the radioactive ray measurement device suddenly increases.
② The radioactive ray measurement device does not function.
③ The alarm of the individual alarm dosemeter sounds.
④ An accident, such as an injury, happens during the activity.
⑤ Serious trouble that affects the team's activity occurs.

(2) The personnel of the facility advise the evacuation of the area.

(3) Any other abnormal situations occur.

2 - 1 - 10 Contamination inspection, Decontamination, Record of radiation exposure, etc.

No. 1 : Contamination inspection

A contamination inspection must be performed, according to the following procedures, on fire fighters, and the equipment and materials involved:

a. Setting up a contamination inspection site

As a rule, for the contamination inspection a contamination inspection room in the facility should be used. If such an inspection room is not available, discuss the matter with the personnel of the facility, and set up an inspection place near the perimeter of the radiation hazard area, or any other nearby suitable area that is capable of preventing

the spread of contamination.

b. Personnel in charge of inspection

As a rule, the contamination inspection should be performed by the personnel of the facility. Depending on situation, selected workers from among the team may assist the personnel of the facility.

c. Contamination inspection method

The contamination inspection shall be performed using a radioactive ray measurement device for the measurement of surface contamination. A contamination inspection of the human body shall also be performed on workers wearing radioactive protection equipment. If any contamination is detected, the workers should remove their clothing and a full inspection should be performed of their entire body.

d. Other items

Rescue workers returning from the site should not smoke, drink or eat until the contamination inspection is finished and they have received approval.

No. 2 Decontamination

Decontamination must be performed according to the following criteria:

a. General rules

(1) As a rule, decontamination work should be performed by the personnel of the facility, upon request. This is because careful considerations are necessary to deal with different kinds of nuclear material, the form of contamination, and the disposal of waste fluid and materials caused by the decontamination treatment.

(2) In general, decontamination is less effective if more time is allowed to pass from the time of contamination; therefore decontamination work should be performed as early as possible.

b. Decontamination of the human body

Severely injured rescue workers or those who suffer a certain amount of radiation exposure due to radiation contaminated substances in a radioactive environment should undergo first-aid treatment, including decontamination treatment, under the supervision of a doctor in the emergency medical center of the facility (excluding rescue workers who were exposed to radiation), and then should be transported to a regional emergency medical facility. In these circumstances, priority should be given to lifesaving instead of excessive decontamination treatment.

For other rescue workers, the following decontamination treatment should be performed.

For the decontamination of the surface of the human body, apply a decontamination reagent, such as a neutral detergent, to the contaminated area. Rub the surface using a scrubbing brush, being careful not to hurt the skin, and then rinse with ample water. If a skin puncture is contaminated, immediately rinse it out with ample water.

If a worker is injured, perform first-aid. If a worker is bleeding, provide pressure on the wound by applying a bandage.

c. Decontamination treatment of fire fighting equipment, etc.

(1) Control of contaminated fire fighting equipment, etc.

For proper control, contaminated equipment should be collected in one location. If necessary, post a guard and secure the area using a rope and signs to prevent secondary contamination due to loss or removal.

(2) Decontamination of contaminated fire fighting equipment, etc.

Decontamination and treatment work of equipment should be performed by the personnel of the facility, upon request.

If it is impossible to decontaminate any equipment, give it to the personnel of the facility and request the necessary treatment or disposal.

No. 3 : Record of radiation exposure & Health management

a. Record of radiation exposure

A record of the rescue team and workers involved in fire fighting activities shall be made and kept according to the following items: (Refer to clause 2-1-9)

(1) For the rescue team and workers, the rescue team activity record sheet (Form 2 of Material 4) and the individual radiation exposure management sheet (Form 3 of Material 4) shall be completed and kept.

(2) For workers involved in a radiation hazard area, in addition to (1) above, the sheet of the formation of the team that entered the radiation hazard area (Form 4 of Material 4) and the record sheet of individual activity in the radiation hazard area (Form 5 of Material 4) shall be completed and kept.

b. Health management
For any workers suffering from radiation exposure or contamination caused through fire fighting activities, in consultation with experts, a health examination should be performed, as necessary.

2 - 1 - 11 Fire extinguishing activities

No. 1 : Fire extinguishing activities in a controlled area

Fire extinguishing activities in a controlled area must be performed according to the following items:

a. Determining the most suitable activity site

(1) In anticipation of the release or diffusion of radioactive substances, set up the site in a well-watered area on the windward side of the accident, where possible. In addition, if there is any risk of radiation exposure due to radioactive rays with high penetrating power, such as gamma rays, neutron rays, etc., it is recommended to make use of concrete facilities, equipment and materials located at the site, etc. in order to provide a sheltering effect against radioactive rays.

(2) The site should be located in a well-watered, elevated area, in order to prevent contamination due to contaminated water from fire fighting.

b. Entering the radiation hazard area

Refer to clause 2-1-9 "Entering the radiation hazard area and emergency evacuation"

c. Preventing diffusion of radioactive substances

(1) The use of water in a controlled area (particularly in an area where non-sealed radioactive substances are handled) may cause the diffusion of radioactive substances. Avoid spraying water directly on radioactive substances, and maintain contact with the personnel concerned in order to understand the situation.

(2) If water must be applied due to the situation of the fire, do not dump water en masse, but rather sprinkle it sparingly at low speed, and using no more than the minimum necessary, in order to minimize the diffusion of radioactive substances.

In this case, workers must wear water-proof protective clothing to prevent contamination from contaminated water.

(3) It must be taken into account that entering into a burning building of a nuclear power facility, or destruction to make an opening for fire fighting

activities, may not only cause flames to explode outwards due to the backdraft phenomenon, but that the sudden inflow of fresh air may also result in the spread of contamination due to the large amount of gases and smoke that may escape at such times.

d. Handling of water that remains after fire extinguishing activities

(1) As the water remaining after fire extinguishing activities may have been contaminated by radioactive substances, appropriate care must be taken in its handling, including the drainage route.

(2) If the water remaining after fire extinguishing activities may flow into a storage/handling area of radioactive substances, take measures to prevent it.

(3) If the water remaining after fire extinguishing activities may be contaminated, make efforts to limit the range of the contaminated area by using sandbags, waterproof sheets, etc.

e. Fire extinguishing activities without using water

If it is expected that fire extinguishing and contamination prevention can still be performed effectively depending on the situation of the fire, buildings and fire fighting equipment, other methods should also be considered, such as the use of powder or gas type fire extinguishing equipment, or shutting the fire in an air-tight room by means of sealing all the openings.

f. Treatment of the remaining fire

(1) Perform treatment in as short a time as possible while conducting radiation measurement.

(2) Perform treatment while preventing contamination, such as avoiding contact with the surrounding goods, etc.

g. Fire under control

Make an assessment while making treatment of the remaining fire

No.2 : Fire extinguishing activities for buildings located in non-controlled areas and areas near the controlled area

In fire extinguishing activities for buildings located in non-controlled areas and areas near the controlled area, priority should be given to preventing the fire from spreading to the controlled area.

No. 3 : Investigation of the cause of the fireIn conducting the investigation into the cause of the fire, depending on the part that is burning, the required investigation should

be conducted with the cooperation of the responsible personnel of the facility, due to the risk of contamination or exposure to radiation.
Therefore, when entering an area where there has been a fire in order to conduct an investigation, the safety of the area must be confirmed in advance by measuring the radiation level of the area.

After completing the investigation, it is necessary to check if the workers suffered any contamination or radiation exposure.

No. 4 : Rescue work during a fire

Rescue work of victims during a fire must be conducted according to the protocol listed in clause 2-1-12, and in collaboration with the fire extinguishing team's support, for example, spraying the area with water, etc.

2 - 1 - 12 Rescue work (in the event of no fire)

As a rule, rescue work to save victims should be performed safely, securely and promptly and with a proper understanding of the situation of victims In the event of no fire, perform rescue work according to the following items: (For rescue work in the event of fire, refer to clause 2-1-11 Fire extinguishing activities)

(1) Before performing rescue work, listen to the responsible personnel of the facility's explanation of the disaster situation, and keep rescue workers well informed of the situation of victims, the method of rescue, etc.

(2) In performing rescue work, the points of concern listed in clauses 2-1-9 and 2-1-10 must be taken into account.

2 - 1 - 13 Emergency rescue work

If there is any risk of contamination from radioactive substances, emergency rescue work must be performed according to the following items:

(1) As a rule, emergency rescue work must be performed with the primary purpose of saving the lives of victims, including the observation and first-aid of victims, and the transportation of victims to medical facilities.

(2) In order to avoid secondary contamination rescue workers must wear protective clothing, respiratory protective devices, rubber gloves, etc.

(3) As a rule, victims in the radiation hazard area shall be transported outside the hazard area by the personnel of the facility. The rescue team should take over the handling of victims after that.

(4) Emergency rescue work must be performed with due consideration for the items set forth in clause 2-1-10.

(5) For seriously injured victims who are also subject to possible radiation contamination and those who were exposed to a certain level of radiation from radiation contaminated substances, first-aid should be administered, including decontamination treatment, under the supervision of a doctor at the emergency medical center of the facility (excluding those who were only exposed to radiation), following which patients should be transported to a regional emergency medical facility. In these circumstances, priority should be given to lifesaving instead of excessive decontamination treatment. In addition, in order to prevent the spread of contamination, the personnel of the facility should be instructed to cover the bodies of victims with a blanket or sheet, etc.

For the transportation of victims, a request should be made to a doctor or manager of the radiation facility to accompany the victims; so that he/she may give an appropriate explanation or advice on radiation to the doctor at the regional emergency medical facility that receives the victims. Furthermore, they should also be requested to bring the equipment required for the prevention of contamination and for decontamination.

(6) Victims not included in the above category should undergo decontamination treatment as described in No. 2 of clause 2-1-10. After that, first-aid should be performed on injured victims. If victims are bleeding, provide pressure on the wound by applying a bandage.

(7) Before loading victims into an ambulance, in consideration of the possibility of contamination from radioactive substances, the floor of the ambulance should be covered with a vinyl sheet, etc. to prevent contamination.

(8) When taking victims to a medical facility, be sure to explain the situation of radiation exposure to a doctor at the facility, etc.

(9) Protective clothing and emergency rescue equipment subject to possible contamination should be sealed in the specified container in order to prevent secondary contamination. In addition, request the responsible personnel of the nuclear facility to conduct the appropriate storage or treatment.

(10) In the event of any other form of transportation, such as via a helicopter, perform rescue work using the same rules as apply for ambulances.

2 - 1 - 14 Public relations

No. 1 : Public relations (PR) at the site of a fire at nuclear power facilities, etc.

For public relations at the site of a fire at nuclear power facilities, etc., make efforts to cooperate with the relevant authorities as well as to share the burden of public relations, while taking into account the following points of concern

(1) For public relations information, emphasis should be placed on the outline of the accident, the situation of fire fighting activities, and the situation of victims.

(2) Public relations for local residents should be conducted correctly and promptly in order to avoid confusion and anxiety.

(3) The points of concern for public relations are as follows:

①Provide the facts:

Make sure not to provide incorrect information, even if trying to provide information quickly.

②Be accurate:

It is most important to provide accurate information. Avoid untrue information, such as personal points of view. Ambiguity should also be avoided.

③Be brief:

Only the main points should be provided. Avoid exaggerations and providing too much information.

④Be clear:

In order to gain the common understanding and sympathy of the general public, the meaning must be clear and easy to understand. Avoid using technical terms and abbreviations that are only understood by specialized people.

⑤Avoid omissions:

Brevity is important, but an intention can not be conveyed if necessary information is omitted.

⑥Avoid ambiguity:
In order to avoid misunderstandings, exclude ambiguous information.
⑦Make repeated announcements, etc.:
One public relation announcement alone can not have a great effect, therefore it is important to make repeated efforts at public relations, as necessary

No. 2 : Points of concern in conducting public relations with the news media

(1) A Press Room, where public relations announcements can be made, should be provided in an area away from the command headquarters in order to avoid hindrances to the work of the fire department.

(2) Provide as much notice as possible on the time and schedule of the next public relations announcement and strictly adhere to this schedule, as well as making announcements at regular intervals.

(3) As a rule, the personnel in charge of public relations should make the announcements. If necessary, the personnel of the facility and other experts in the press room should also explain the situation.

(4) As a rule, request news reporters not to gather news from sources other than the personnel in charge of public relations in the press room. This should be confirmed with the news media at the time of the first announcement.

2 - 2 Activities when a specified event is reported (related to Article 10 of the Nuclear Disaster Law)

If a specified event is reported, the fire department will be requested to perform activities in close contact with the relevant authorities based on the regional disaster prevention plan. To deal with the situation, the fire department must make efforts to establish appropriate liaisons with the relevant authorities, and to maintain a flexible activity system in preparation for the possible declaration of a nuclear power emergency case (related to Article 15 of the Nuclear Disaster Law). The rescue team mobilized to the site should take measures in accordance with the policies described in item 2-1-3 and the following items of clause 2-1 General activities. They should also gather relevant information and devote sufficient consideration to securing safety.

2 - 3 Activities when a declaration of a nuclear power emergency case is made (related to Article 15 of the Nuclear Disaster Law)

If a declaration of a nuclear power emergency case is made and the fire department conducts activities in an area to perform initial measures against emergency cases as designated by the declaration, the fire department must take into consideration the contents of the declaration and conduct activities according to the regional disaster prevention plans of the relevant municipalities.

In addition, if the fire department is involved in evacuation activities, the following points of concern must be taken into account.

2 - 3 - 1 Evacuation

No.1 : Timing of the evacuation order

If a declaration of a nuclear power emergency case is made, an evacuation order will be issued to residents in response to an instruction from the Prime Minister or an independent assessment by the head of the municipality. This order is given to minimize the effects of radiation exposure due to the release of radiation, so instructions are given to residents to evacuate the disaster site and move to a specified building, a concrete building or an area away from the site. In doing so, residents should be guided to an evacuation facility made of concrete or another place of refuge (temporary meeting place). (See Figure 2)

No. 2 : Guidelines for evacuation

(1) For evacuations, take into account the "Guidelines for evacuation to another building or area" of Table 2.

(2) In order to reduce the level of radiation exposure make full use of "Effectiveness of evacuation to another building, etc." described in the last part of clause 2-3-1 Evacuation.

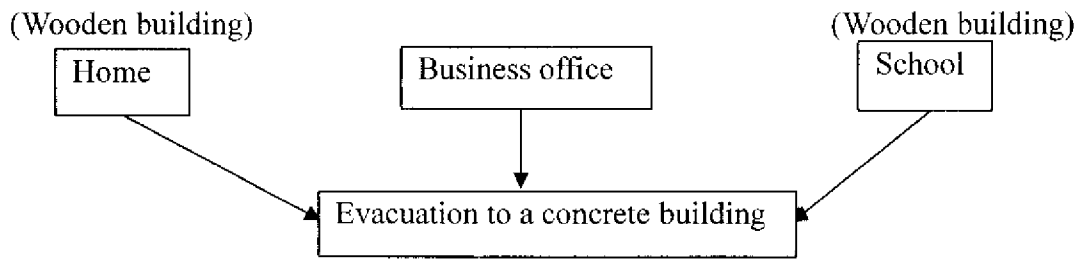
(3) In evacuations, priority should be given to "infants, children and pregnant women" who are all more sensitive to radiation.

No. 3 : Evacuation to an evacuation facility in a concrete building

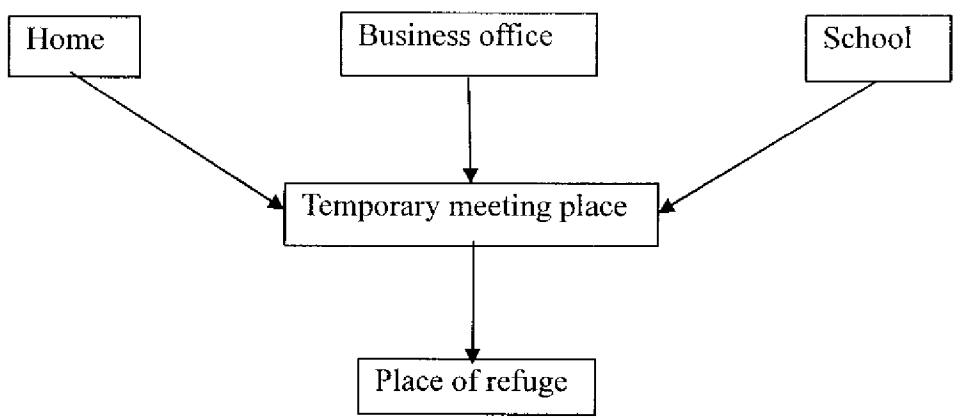
(1) In evacuations to a concrete building, people should, in general, walk to the evacuation facility. However, senior citizens that have difficulty walking and the physically challenged should be transported by car in collaboration with the police and Self-Defense Force, etc. If the equipment required for the physically challenged is not provided in the place of refuge, such persons should be transferred to a secondary place of refuge, such as a social welfare facility.

(2) People who may have been subjected to radiation exposure should not be moved to an evacuation facility. Measures for such persons should be taken according to clause 2-1-13 Emergency rescue work.

Figure 2 : Evacuation examples



Evacuation example to a concrete building



No. 4 : Evacuation to a place of refuge (temporary meeting place)

(1) It is generally better to have residents gather in a temporary meeting place (refuge facility in a concrete building, etc.) and transport them by bus to a safe facility (place of refuge) located in a different area. In this case, guidance for evacuation to a temporary meeting place should be given according to the rules of guidance for evacuation to a concrete building. In addition, guidance for boarding a bus, etc. should be given by municipal officials, voluntary disaster relief bodies, etc.

(2) People who may have been subjected to radiation exposure should not be moved to a place of refuge (temporary meeting place). Measures for such persons should be taken according to clause 2-1-13 Emergency rescue work.

(3) Depending on the situation, if it seems possible for residents to move by private automobile, request them to do so

Table 2 : Guidelines for evacuation to another building or area

Expected dosage (Unit: mSv)		Protective measures
Effective dose due to external exposure	・Equivalent dose of thyroid gland due to radioactive iodine ・Equivalent dose of bone surface or lungs due to uranium ・Equivalent dose of bone surface or lungs due to plutonium	
10 - 50	100 - 500	Residents should move indoors and seal openings, such as windows, to ensure airtightness. However, if neutron rays or gamma rays are released from the nuclear facility and the local disaster prevention headquarters gives instructions, evacuate to a concrete building or to another area away from the facility.
50 or over	500 or over	Residents should evacuate to a concrete building or another area away from the facility according to the instructions.

Note : 1. The expected dosage shall be estimated by the disaster prevention headquarters, etc., and based on this estimation, instructions for protective measures shall be issued to residents, etc.

2. The expected dosage means the dosage level a person may be expected to receive if he/she remains in the open air without protective measures throughout the duration of the radiation release.