Section 2 : Fundamental rules in conducting fire fighting and rescue activities

2 - 1 On receipt of a 119 call

When a disaster caused by chemical terrorism is notified via a 119 call, it is important to predict what will happen later on and take timely measures against the disaster. Otherwise, the disaster might be further expanded and cause secondary disasters. People who recognized the disaster in the initial stage usually make a 119 call, and most of them must have seen the scene of the disaster. In this sense, at the time of receipt of notification of the disaster, it is desired to predict what will happen later on, manage troops, and provide information as much as possible.

(1) If a disaster notified via a 119 call applies to the cases described below, the communication and command room of the fire department (herein after referred to as the "command room") shall predict what will happen later on. The command room shall assemble troops, provide information to troops, report to law enforcement officials, and provide information to self-defense forces, a health department, medical institutions, a sanitation bureau, etc. as necessary.

A. When it is notified that a number of victims complain about abnormalities of the eyes, nose, throat, etc.
B. When a number of victims arise in a crowded public place.
C. When notification is made about offensive odor, abnormal corpses or dead plants near the place where victims arise.
D. When notification is made from a person seeing or hearing about the scene of chemicals dispersion.

(2) Call-out includes the following :

A. Call out troops provided with the equipment such as chemical protective suit, detecting/measuring instruments, etc.
B. Call out rescue teams suitable for the extent of the victims.
C. Call out any other troops as necessary.
D. Prepare for reinforcement of the fire fighting troops etc.
E. Call troops' attention to the extent of the disaster, and provide information about climatic conditions including the wind direction, wind speed, humidity, etc. and information about what was learned from notification of the disaster.
F. Depending on the situation, larger area fire service troops and additional emergency troops should be requested.

◎ Necessary troops

① Troop for chemical disasters, or Troops provided with the equipment for chemical disasters
② Rescue team
③ Pump team
④ Ambulance team
⑤ Commander team
⑥ Troop transport cars
⑦ Other troops required depending on the extent of the disaster and victims

* Troops should be assembled depending on the extent of the disaster and victims.

2 - 2 On dispatching fire fighting and rescue troops

(1) Measures to be taken before dispatch

A. Loading and reinforcement of the necessary equipment
B. Preparation for wearing the chemical protective suit, etc.
C. Consider climatic conditions including the wind direction, wind speed, humidity, etc.

◎ Necessary equipment

① Protective respiratory apparatus : Air respiratory system, Oxygen breathing apparatus, Gas mask, etc.
② Protective suit : Positive pressure type chemical protective suit, Chemical protective suit (troops having no protective suit should use ponchos, etc.)
   * Ponchos should be used, only if a chemical protective suit is not available, to avoid secondary exposure to chemicals when working in the neighborhood of the area where harmful chemicals exist. It is no use to wear ponchos for protective measures in an area where high-concentrated chemicals remain, or if there is a possibility of direct exposure.
   * When wearing non-sealed type chemical protective suit or ponchos, entry of chemicals through openings of suit should be avoided by applying gum tapes or other materials between the gloves, boots, masks, chemical protective suit, and ponchos.
③ Detecting/measuring equipment (Detecting tube, Detecting machine, Detector paper), Oxygen-deficient air jeopardy gas measuring machine, etc.
④ Decontamination reagent spreader & Decontamination reagent

⑤ Decontamination shower, etc.
⑥ Other necessary equipment and materials

(2) Measures to be taken on the way to the disaster site

A. Pay attention to the surrounding situation, and check for any abnormalities.
B. Consider the most suitable treatment site before arriving in the disaster site.
C. On the way to the disaster site, if troops encounter any colored gas, offensive odor, irritating odor, victims, corpses, dead plants, dead insects, etc., they should immediately stop movement to report to other troops as well as to conduct a measurement.
D. Conduct warm-up operation as much as possible. In particular, if calibration is necessary for instruments, perform it where there is no possibility of chemical contact.
E. The personnel in the command room should provide information, by radio or other means, on the status of requests for assistance from other authorities, the change of weather conditions, etc.

2 - 3 Primary objects in fire fighting and rescue activities

In fire fighting and rescue activities for a disaster caused by chemical terrorism, the rescue workers should immediately identify what the harmful chemical is, the extent of the disaster and assess the risk under a firm command control and close contact with the relevant authorities. At the same time, while securing the safety of the rescue workers themselves, they must prevent the damage from spreading and secure the safety of the local residents as a top priority.

(1) Prevent the rescue workers from being exposed to chemicals (secure the safety of the rescue workers).
(2) Prevent spreading the damage (prevent spreading of chemicals including spreading through the rescue workers, victims, equipment, ambulance car, etc.).
(3) Rescue the victims.
(4) Immediately identify the chemical substance and estimate the danger level using the detecting/measuring equipment, etc.
(5) Treat the victims appropriately and transport them urgently.
(6) Appropriate decontamination (decontamination of the rescue workers, victims, disaster site, equipment, vehicles, etc.).
(7) Make close contact with the relevant authorities such as the police, medical institutions, health department, relevant departments of local municipalities, self-defense forces, etc.

2 - 4 Precautions

(1) Countermeasure plan

Among important facilities located in the local area, list up potential facilities having a danger of terrorism and draw up a countermeasure plan as necessary.

(2) Collaboration with the relevant authorities

At ordinary times, promote mutual understanding with the relevant authorities including the police, self-defense forces, medical institutions, and other relevant authorities such as a sanitation bureau, etc.; and establish the collaboration and contact system in the case of disaster giving consideration to the actual local situation.

Also, check the collaboration system and verify the maintained system by means of conducting joint training, exercise on paper, simulation, etc.

(3) Training and Exercise

By conducting trainings and exercises, make efforts to learn the features of chemicals, scenario of terrorism, countermeasures for disasters, handling of the equipment, etc.

2 - 5 Measures to be taken on arrival at the disaster site

(1) Determining the most suitable treatment site

A. Determine the most suitable treatment site by considering the wind direction, wind speed, land features, building conditions, access for responders arriving later, and route for transferring rescue workers. Rescue workers should enter the site from the safest route, such as the windward side or parallel to the wind direction. In addition, they should select a safe place by checking the surrounding conditions as well as by checking if any chemicals remain.

B. Until the existence of a chemical agent is confirmed, there still remains a possibility that the disaster was caused by a radioactive substance. Depending on the extent of the disaster, conduct a measurement of radiation. In addition, suspect a biological agent of causing the disaster.

C. If the danger area or the quasi-danger area is designated, select a safe location for the treatment site. In addition, consider the access for responders arriving later, route for transferring victims, and route for transferring rescue workers.

D. Soon after determining the treatment site, conduct the following activities (gather information, designate the warning area, etc.):

(2) Information to be gathered

Gathering information should be conducted for checking the existence of victims and the danger level as top priorities.

A. The disaster location.
B. Check for any offensive odor, abnormalities of animals or plants, corpses or dead plants.
C. The wind direction, wind speed, land features, building conditions, and town street/block conditions.
D. The details of the disaster location (existence of suspicious materials, source of contamination by the chemical agent, etc.).
E. Damages due to the chemical agent, directions of spreading and flow, possibilities of expansion.
F. Evacuation of the residents, etc.
G. Check if any victims are to be rescued, their location and number.
H. Victims observation result.
I. Information from witnesses.
J. Result of measurement by the detecting/measuring equipment (including the result of measurement made by other authorities).
K. Situation of activities by the relevant authorities, information provided from the relevant authorities.
L. Information gathered from the people concerned about objects for fire fighting activities.
   (a) Situation of victims to be rescued (existence of victims, situation of injuries, number of victims, location).
   (b) Actual situation of the disaster, situation inside the objects for fire fighting activities.
   (c) Contents of the measures taken by the people concerned.
   (d) Other information regarded as required for fire fighting and rescue activities.
M. Other particular items or situations.

(3) Measures to be taken by the earliest arriving troop:

A. The earliest arriving troop should check on the above clause (2) and send a report to the site conductors, etc.
B. As there is a possibility that a number of victims may arise, immediately make requests without hesitation for dispatch of troops and personnel of the relevant authorities required, and for arrangement of the equipment (including requests for collaborative assistance, and wide area assistance).

2 - 6 Designation of the warning area, etc.

(1) Designation of the warning area for fire fighting and rescue activities.

A. Conditions for designation of the warning area for fire fighting and rescue activities

In the cases as described below, consider the retention area of chemicals, land features, wind direction; and immediately set up the warning area for fire fighting and rescue activities by spreading ropes etc. In addition, secure the safety of the residents etc. by employing an evacuation order and by limiting entrance to the area.

(a) When a chemical agent was identified or detected.

(b) When any offensive/irritating odor or colored gas was identified, regardless of its name, and if its features are unknown.

(c) When there is a high possibility that a chemical agent exists, according to the situation of the site; or if there is any abnormality in the physical condition of the exposed people.

* Expected flow directions of poisonous gases.

① From windward to downwind.

② When the specific gravity of chemical agent is higher than air : .

- From higher elevation to lower elevation.
- From upstairs to downstairs.
- From aboveground to underground.
- From the ground surface to sewers, tunnels, etc.

③ When the specific gravity of chemical agent is lower than air : .

- From lower elevation to higher elevation.
- From downstairs to upstairs.
- From underground to aboveground.

④ From ventilators to air inlets (Flow via air conditioners).

⑤ To train running directions in the subway tunnel.

⑥ Besides the above, there is a possibility that unexpected high-concentration gas spaces may exist around buildings located downwind.

B. Range of the warning area designation, etc.

The warning area should be set up following the items described below. In addition, chemical agents used for chemical terrorism have a higher toxicity than that of chemical substances used for industrial purposes. Even a small amount of inhalation may often cause death. More than two kinds of chemical agents may be used in a terrorism attack. Therefore, the warning area should be set up wider than those in the case of general chemical disasters.

(a) A warning area should be designated as an area inside of an enclosed zone. The center of the zone is the disaster location. Among the locations where an offensive odor, a colored gas, or a chemical agent was detected or measured, select a location that is furthest away from the disaster location. Add another sufficient distance from the location for safety sake, and the total distance from the disaster location should be the length to the center of the zone. As for the downwind side, set up a greater range, considering on the wind speed.

(b) If no gas was detected or measured, the warning area should be set up according to the judgment of the command room manager depending on the extent of the disaster.

(c) If buildings , a highway, or underground facilities, etc. exist near the disaster location, include them in the warning area.

(d) Designate town blocks, buildings, grounds, etc. as separated units, and indicate those separated areas putting up ropes, signs, signboards, etc. In addition, dispose troops there as necessary.

(e) If police officers have arrived at the site, collaborate with them, indicate the warning area and time schedule to them, and ask them to cooperate with the evacuation of the residents, inhibition or limitation of coming into the site, traffic control, etc.

(f) Always review the danger level. Make judgment of the danger level based on the result of detection and measurement, wind direction, wind speed, spreading situation, extent of damage, etc. From those viewpoints, widen or reduce the warning area.

If widening of the warning area is determined, immediately conduct it without hesitation. On the other hand, if reduction of the warning area is intended, first confirm the safety with respect to stoppage of spreading by means of sealing chemical agents, the extent of the decontamination procedures made, rechecking of the area by using the detecting equipment, and consultation with the relevant authorities, etc.

C. Measures for restrictions in the warning area

As a rule, evacuate the residents from the warning area. In this case, clearly indicate the area where the residents should be evacuated from, and give instruction for the evacuating direction, place and route considering the wind direction and flow direction of poisonous gas. In addition, guide the residents in highly dangerous areas, victims, and those who may be distressed.

(3) Designation of the danger area

In the warning area for fire fighting and rescue activities, the danger area should be designated if the conditions described below apply. Activities in the danger area should be strictly controlled including the arrival of rescue workers and other people. In the

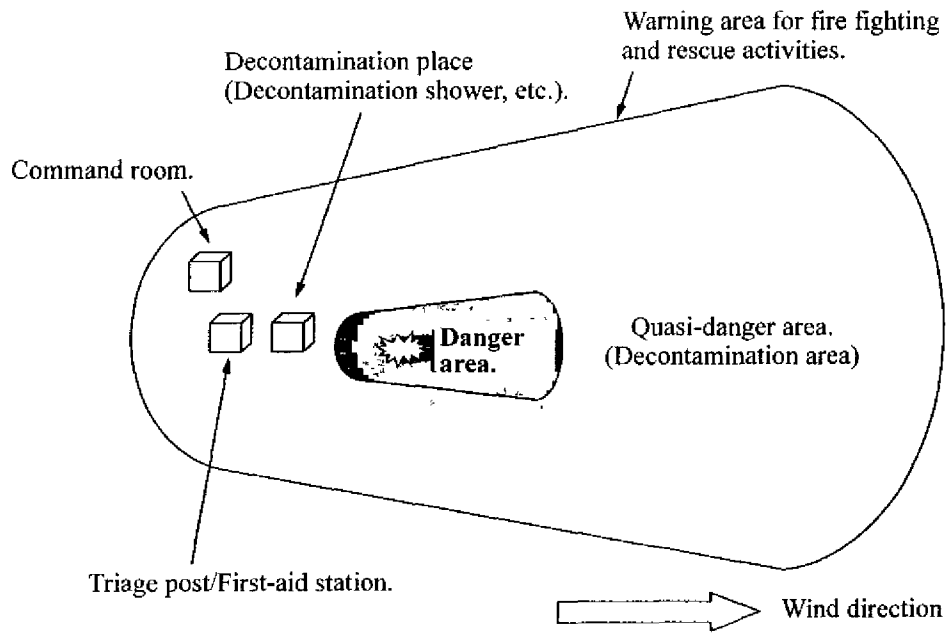
same way as the warning area, the danger area should be set up wider than those in the case of general chemical disasters.

A. Conditions for designation
   (a) Area where a chemical agent was identified or detected
   (b) Area where there is much danger to people's lives; which is recognized according to judgment of the command room manager depending on the extent of the disaster.

B. Protocol
   (a) Consider the danger caused by existence and flow of chemical agents. Designate town blocks, buildings, grounds, etc. as separated units, and indicate those separated areas by putting up ropes, signs, signboards, etc. In addition, make them known to troops, facilities concerned, and the relevant local authorities.
   (b) Always review the danger area distribution. Make judgment of the danger level based on the result of detection and measurement, wind direction, wind speed, spreading situation, extent of damage, etc. From those viewpoints, widen or reduce the warning area.

C. Controls over activities in the danger area
   (a) Prohibit entry of people who do not take such physically protective measures such as an air respirator system, a protective suit, etc. In particular, if the released chemical is not identified or the chemical induced erosion, or when entering into an area filled with a high-concentrated gas or a chemical agent, entry into the area is, as a rule, limited to rescue workers who wear a sealed chemical protective suit such as a positive pressure type.
   (b) Activities should be conducted by a group of rescue workers consisting of the designated minimum number of workers (at least 2).
   (c) With respect to the command, each of multiple commanders should take its share of the responsibility in the respective activity locations and manage the following items:
      a. Preliminary check of the situation of rescue workers wearing the respiratory protective equipment, chemical protective suit, etc., rescue workers' physical conditions, the withdrawing route of troops, etc.
      b. Administration of the entry of troops and rescue workers (the names of troops, workers' names, entry time, activity time, etc.).
      c. Management during activities such as monitoring of fire fighting and rescue activities, ordering emergency rescue workers to be on standby, securing the means of communication with working rescue troops, etc.
      d. Decontamination of the rescue workers withdrawn from the site, checking of the rescue workers' physical conditions, checking of the situation of chemical agents contaminating the rescue workers, and designation and management of the place and method for removing the physical protective suit and equipment.

Conceptual illustration for designation of the warning area, quasi-danger area, and danger area.



(4) Designation of the quasi-danger area (decontamination area) & Decontamination

A. For the purpose of decontamination of the rescue workers, the equipment and the victims withdrawn from the danger area, designate the quasi-danger area (decontamination area) away from the danger area.

B. The rescue workers engaged and the equipment used in the danger area should be completely decontaminated in the quasi-danger area, thus securing their safety by preventing the expansion of the contaminated area, and secondary contamination, etc. In addition, if complete decontamination of the equipment etc with disinfectant is not possible, the equipment etc. should be sealed in a container or a plastic bag.

C. The victims rescued from the danger area should be transported by ambulance after decontaminating them by cleaning, changing clothes, taking a shower, etc. in the quasi-danger area.

D. Contaminated water used for decontamination should be, as a rule, rendered harmless by neutralization etc. before draining out.

(5) Collaboration with the relevant authorities

To police officers, indicate the designated warning area and ask them to cooperate with the restriction of entry by people other than those who are engaged in emergency activities.

(6) Make restriction measures known to the residents, etc.

A. When the warning area for fire fighting and rescue activities is designated, practice public relations to make it known to the residents, etc. In addition, in the case where emergency procedures are required, such as the danger to people's lives, an order for evacuation, etc., designate a team or rescue workers for practicing public relations and indicate to them the top priorities, so as to make them practice appropriate public relations immediately.

B. If the designated area is wider than usual, practice public relations to local fire brigades located in respective areas so that they may be engaged in the restriction procedures and evacuation activities. In this case, consider use of wireless communication systems for disaster prevention managed by disaster-prevention bodies of local municipalities.

C. Public relations should be practiced in a way easily understandable for the residents on the main items described below.

(a) Designation of the warning area for fire fighting and rescue activities.
   a. Designated period and area.
   b. Restrictions designated for the area.

(b) Evacuation order.
   a. Area.
   b. Individuals to be evacuated.
   c. Place and method for evacuation.
   d. Measures to be taken for evacuation of the residents etc.

(c) Prohibition or limitation of entry.
   a. Area of entry prohibition or limitation.
   b. Individuals who will be prohibited or limited for entry.

(d) Danger of the chemical agent.
   a. Influence to human bodies.
   b. Measures to be taken for victims.

2 - 7 Measures to be taken by the command headquarters manager.

In the event of chemical disasters including chemical terrorism, the command headquarters manager should in particular make judgment, take command, and control activities appropriately.

(1) Establishment of the command headquarters

A. The most suitable command headquarters site is determined by considering the wind direction, land features, town block conditions, etc. In addition, the site should be located away from the danger of the chemical agent and should be

located in the most suitable area for commanding.

B. If fire fighting and rescue activities are to be conducted in areas larger than usual, the areas should be divided into smaller sub-areas and each of the multiple commanders should take his/her own responsibility.
C. The command headquarters manager should establish communications with the relevant authorities, while taking command of the total troops as the disaster circumstances demand.
D. If a command headquarters or the like is already established by one of other relevant authorities in the disaster area, the command headquarters should be established near that or in a location convenient for collaboration.

(2) Activity policies

Activity policies should be determined by totally judging the disaster situation after identifying the extent of the disaster and accessing the risk, in order to prevent secondary disasters and secure the safety of the local residents as a top priority.

A. Activity policies should always be determined based on judgment of the situation from a viewpoint of the danger as well as the chemical aspects.
B. Immediately identify the danger level based on information from troops arriving in the disaster area earlier. In addition, determine activity policies to deal with the danger situation based on the factors for judgment as described below:
   (a) Information on the danger to people's lives (situation of injuries, and existence, number and location of victims,).
   (b) Identification of the chemical substance, area of spreading.
   (c) Need for determination of the warning and danger areas, and the range of those areas if needed.
   (d) Need for evacuation of the residents etc., and the range of those areas if needed.
   (e) Availability of first aid treatment, the means, and equipment required for first aid treatment.
   (f) Safety management.
C. Secure the safety of the residents etc. by immediately designating the warning area for fire fighting and rescue activities.
D. In fire fighting and rescue activities in the danger area, strictly control those activities in the area by instructing respective troops to conduct their own operation concretely as well as deal with the disaster by disposing troops and the necessary equipment.
E. In fire fighting and rescue activities, top priorities should be given to searching for lives to save, the rescue operation, and taking measures for preventing the chemical agent from spreading.
F. As a rule, take protective measures to prevent the contaminated water used for decontamination from draining out into the river or sewer.
G. Activity policies should be widely known to all the rescue workers through the

respective commanders, to strictly control the activities.

(3) Requests for assistance

A. According to the scale and situation of the disaster, additional troops and equipment should be requested. Point out specifically the names of the troops, equipment names and quantity, and the assembly place.
   (a) Required troops such as chemical disaster reaction troops, rescue troops, pump troops, ambulance troops, equipment transport troops, smoke extraction troops, troop transport cars, commander team, etc.
   (b) Required equipment such as detecting/measuring equipment, air respiratory system, chemical protective suit, decontamination shower unit, decontamination agent spreader, decontamination agent, etc.

B. To smoothly conduct evacuation guidance to the residents, first-aid treatment, etc. through close contact with the relevant authorities, the rescue workers should make requests for assistance reporting to the authorities listed below. Those requests should be made immediately considering the time required for arriving at the site.
   In addition, if the disaster scale is large and measures for securing the safety of the residents must be taken in a wide range of area, application of Disaster Measures Basic Law and Area Disaster Prevention Plan should also be considered.
   (a) Administrative bodies
      a. Police.
      b. Prefectural governments & local municipalities.
      c. Health department & Sanitation bureau.
      d. Self-defense forces.
      e. Administrators of roads, rivers, sewers.
   (b) Others
      Medical association etc.

C. In addition, the rescue workers should conduct fire fighting and rescue activities appropriately seeking advice from specialized networks locally established etc.

2 - 8 Fire fighting and rescue activities

(1) Victim-searching & Rescue activities

A. To conduct victim searching and rescue activities in the danger area, designate troops provided with the physical protection equipment and totally control their activities. (Refer to the item "Designation of the danger area")

B. Always assess the risk due to change of the extent of the disaster such as spreading of a chemical agent, and secure the safety in the range of area for searching and rescue operations. If a secondary disaster is expected, immediately evacuate the rescue workers.

C. In the danger area, conduct victim-searching as follows:
   (a) In the initial stage, conduct searching only in designated places near the suspicious material as a top priority.
   (b) After that, move to the chemical agent spreading and flowing directions and search the total danger area.
   (c) Only in the designated place near the suspicious material, conduct searching selecting means of rescue operation, which enables to save victims in a short time.

D. Rescue activities should be conducted as follows:
   (a) The command headquarters manager should totally assess the locations of the victims, extent of the disaster, obstruction factors for activities, etc. to determine the means of rescue and the troops in charge.
   (b) Select the means of rescue that saves the victims in the shortest time.
   (c) If it is possible to take first-aid measures such as diffusion, discharge, or sealing of the chemical agent, conduct those measures in parallel with rescue activities.
   (d) Before conducting activities, station rescue workers for dealing with unexpected emergency cases as well as to establish a communication system.
   (e) To secure the safety of the victims, make them wear the respiratory protective equipment as necessary.
   (f) During the rescue operation, be careful not to have the rescue workers or victims contact the chemical agent adhered to the soil etc.

E. The victims contaminated should be decontaminated by cleaning, changing clothes, washing, etc. in the quasi-danger area, and then transported to a safe place such as a first-aid center or an ambulance car for taking relief measures.

F. If there are a number of victims and injured people, a first-aid relief center should be established away from the quasi-danger area, and it should have oxygen breathing apparatuses, soapy water, water, and other necessary first-aid equipment.

G. The rescue workers engaged in first-aid relief activities should take physical protective measures to prevent secondary infection from the victims by wearing gas masks, masks, dust-proof glasses, simplified protective suit, ponchos, rubber gloves, etc.

H. If there are a number of injured people, make close contact with medical institutions to prepare for medical treatment.

(2) Emergency measures

A. General rule

Consider the equipment possessed by the rescue teams, and take emergency measures judging the means and procedures depending on the extent of the disaster.

B. Means

(a) Take proliferation-preventing measures by sealing as a top priority.

(b) If emergency measures are difficult or it will take a long time to deal with the situation, make the residents evacuate and conduct the following measures as top priorities:

a. Remove the suspicious materials out of the disaster site as long as possible.

b. In the case where the harmful material is in liquid form, prevent proliferation by using the earth and sand, sandbags, etc. (including an operation to prevent the material from spilling into the sewers or rivers).

c. In the case of indoors, close and seal the room where the suspicious material exists.

d. Other measures (chemicals for decontamination, decontamination or dilution by spraying, etc.).

(3) Identification of the substance

A. Identification using the detecting/measuring equipment:

(a) The detecting/measuring work should be conducted by a group of rescue workers consisting of the designated minimum number of workers (at least 2) wearing or using the necessary equipment, such as a chemical protective suit, an air respiratory system, etc. to secure physical protection.

(b) If the detecting/measuring equipment is possessed by one of the relevant authorities such as the police, conduct measurement in close contact with them.

(c) The detecting/measuring work should be first conducted for the safer area located in the windward or in parallel to the wind direction, and then

conducted gradually approaching to the danger area. If conducted by more than one team, the detecting/measuring area and locations should be determined in advance.

(d) If two or more different concentration values are measured, adopt the higher (more dangerous) value as the standard.

(e) The personnel in charge of detection/measurement should report the results (detection/measurement positions and values) of the detection/measurement in the respective positions and report them to the headquarter manager of the site and indicate those values to clarify the danger level as necessary.

(f) All chemical agents cannot be always detected by each one of the detection equipment. Therefore, existence of some other unknown chemical agents should be suspected. In the case where two or more chemical agents exist in the same place, be aware that the toxicity may become stronger due to mutual action between the two.

B. Detection/measurement by the relevant authorities
If measurement is conducted by one of the relevant authorities such as the police, conduct measurement in close contact and collaboration with them as well as share the measurement results.

C. Information from medical institutions and Japan Poison Information Center
To make identification of the substances besides identification made by the measuring equipment, provide information on the observation result of the injured people to medical institutions and Japan Poison Information Center to have advice from them on what substances are suspected. Also, obtain information from medical institutions, where victims are hospitalized, on speculation of the substances through medical examinations of the victims.

(4) Decontamination

A. Decontamination of rescue workers and the equipment:

(a) The rescue workers and the equipment engaged in the danger area should be decontaminated every time before they go out of the quasi-danger area, thus preventing proliferation to the outer area.

(b) As a rule, decontamination should be performed in the quasi-danger area (decontamination area) where a secondary contamination due to decontamination never occurs.

(c) Decontamination should be performed by taking a shower or by being cleaned with a water hose. Spraying water should be continued for about 10 seconds to each position using high volumes of water to wash completely.

(d) Consider use of decontamination agents or other chemicals for

decontamination.

(e) As for the equipment, which may be damaged by water, avoid using water and wipe them down instead.

(f) The personnel in charge of decontamination should wear an air respiratory system, a gas mask, and a chemical protective suit or a poncho to avoid a secondary contamination due to spreading of decontaminated water.

(g) As a rule, take measures to prevent contaminated water from spilling into the sewer, rivers, etc.

(h) The physical protective measures should be released at a specified location in the quasi-danger area. As a rule, the respiratory protective equipment should be released last.

(i) After releasing the protective suit etc., practice gargling, eye washing, and cleaning of other sweating areas.

B. Decontamination of injured people:

(a) Among the injured people or the people evacuated from the danger area, those who were (or may have been) exposed to chemical agents should be decontaminated before being moved out of the quasi-danger area.

(b) As a rule, decontamination should be performed in the quasi-danger area (decontamination area) where a secondary contamination due to decontamination never occurs.

(c) Decontamination should be performed by cleaning (use clothes to absorb the poison or deleterious substance adhered to the skin. Never wipe down.), taking off clothes (cut clothes using scissors etc.), or washing by taking a decontamination shower with hot water (35 - 37℃) or water as well as by gargling, eye washing, etc. In those cases, consider the contaminated people's privacy. In particular, when washing in a cold season, consider supply and heat-retention of the hot water. Clothes taken off the victims should be sealed in a plastic bag, and a provision of clean clothes to the victims should be considered.

Before performing decontamination of the victims with water or hot water, judge if it is appropriate to perform decontamination by checking the consciousness level and physical conditions of the victims.

(d) The personnel in charge of decontamination should wear an air respiratory system, a gas mask, and a chemical protective suit or a poncho to avoid a secondary contamination due to spreading of decontaminated water.

(e) As a rule, take measures to prevent contaminated water from spilling into the sewer, rivers, etc.

C. Decontamination of the area:

(a) When performing decontamination work, keep close contact with the police considering their criminal investigation.
(b) Decontamination activities should be performed under collaboration with the relevant authorities.
(c) When performing decontamination work, the personnel in charge should wear an air respiratory system, a gas mask, and a chemical protective suit for their physical protection.
(d) When decontamination agents are used, be careful enough against sudden chemical reactions or spreading of chemical agents.
(e) As a rule, take measures to prevent contaminated water from spilling into the sewer, rivers, etc.
(f) The rescue workers and the equipment engaged in decontamination work should be decontaminated according to the item A.
(g) If it is judged that decontamination work is difficult for local authorities only to perform, immediately request dispatch of self-defense forces.

* How to prepare decontamination agent composed of bleaching powder.

Put the bleaching powder (a small amount at a time) into a bucket (or a container) filled with water (in a ratio of 1 bleaching powder to 3 – 4 water) and keep stirring at all times. After the bleaching powder has dissolved in the water, move the solution from the bucket into the sprayer. Take into account the following for preparation:

① Bleaching powder does not completely dissolve in water.
② After stirring, wait until the solution will be separated into the top clear layer and the sludge (insoluble part).
③ Move the clear fluid only to the sprayer.
(Do not put the insoluble part into the sprayer. Otherwise, it may damage the sprayer due to clogging etc.)
④ Bleaching powder is harmful to human bodies. Wear a protective mask (for protection of the face and airways), a protective suit, etc.
⑤ The bleaching powder solution prepared will not keep well (chlorine content will decrease with time).

(5) Emergency transport

A. Measures in the case of emergency transport:
(a) Victims should be carried into an ambulance car after they are decontaminated as far as possible.

(b) When carrying victims into an ambulance car, rescue workers should use shielding equipment to prevent spreading of contamination from victims.
(c) Rescue workers in charge of the transport of victims should take measures for prevention of contamination by wearing a cap, gloves, dust-proof glasses, a mask, etc. Also, consider wearing a chemical protective suit (or ponchos if unavailable), a gas mask, etc.
(d) After victims are discharged from an ambulance car, perform decontamination of the ambulance car and the equipment, thus preventing the spread of contamination via the ambulance car.

B. Collaboration with the command headquarters and medical institutions
(a) The command room, command headquarters, and rescue troops should share the information on medical institutions and establish a quick emergency transport system.
(b) Information obtained from victims on the way to the hospital should be provided to the command headquarters as necessary, because such information is useful for determination of fire fighting and rescue activity policies.
(c) When handing over to a doctor, provide information on the victim observation result, the situation of the disaster site, the name of the chemical agent if known, the situation of other victims, etc.
(d) If rescue workers obtain information from medical institutions on the name of the chemical substance suspected from the symptom(s) of the victim(s), they should immediately report it to the command headquarters as well as other medical institutions where other victim(s) are hospitalized.

(6) Evacuation guidance

* In the case of a large scale disaster which should be dealt with according to Area Disaster Prevention Plan or Disaster Relief Law based on Disaster Measures Basic Law, the evacuation "guidance" should be read as "advice" or "instructions".

A. Preparations for an initial movement:
(a) Make the residents in the danger area or in the adjacent area evacuate immediately. In the danger area, victim-searching and evacuation guidance should be conducted simultaneously.
(b) If activities must be conducted over larger areas, make close contact with the relevant authorities and promptly establish a condition for an initial movement.

B. Evacuation guidance:
(a) If evacuation guidance has to be conducted over larger areas, an advance command base should be established and the required troops and

equipment should be disposed there.

(b) Request the relevant authorities to go into action, and consult with them on the items described below, in order to conduct evacuation smoothly.
   a. Evacuation area & place of refuge.
   b. Means of public relations (publicity car, governmental wireless communication systems for disaster prevention, news organizations, etc.).
   c. Assignment of duties by the relevant authorities.
   d. Measures for transportation facilities.
   e. Others required for evacuation guidance.

(c) Reconfirm that the residents including victims are guided for evacuation or already evacuated.

C. Make an evacuation order known to everybody:

(a) Make an evacuation order known to everybody using fire engines or via the relevant authorities to make the residents evacuate by themselves. In this case, widely notify the residents of the evacuation area, place of refuge, flame management, crime prevention measures, goods to carry with, etc.

(b) Widely make use of vehicles of the relevant authorities, governmental wireless communication systems for disaster prevention, news organizations, etc. In particular, request news organizations to follow the regulation on limitation of entry into the evacuation area.

(c) To limit entry into the warning area for fire fighting and rescue activities, station rescue workers in the site as necessary as well as request cooperation of police officers.

2 - 9 Safety management

(1) Safety management

A. When an offensive odor or a colored gas is recognized, even though a chemical agent's name and features are unknown, or when existence of a chemical agent is not confirmed but there is a high possibility that a chemical agent exists judging from the situation of the site, or when the residents have experienced some physical abnormalities, a warning area for fire fighting and rescue activities will be designated. In this case, rescue workers should conduct fire fighting and rescue activities taking measures for physical protection depending on the extent of the disaster in the danger area.

B. Rescue workers should firmly understand the danger level of the chemical agent affecting people's lives, and troop leaders should notify rescue workers of the new information.

C. Troop leaders should be in complete control of physical conditions of their

troop members by having a report on the physical conditions of the members who came back after engaged in fire fighting and rescue activities in the danger area.

D. If rescue workers find any abnormalities of their protective suits etc. during activities in the danger area, they should immediately go out of the danger area to check physical conditions and report to the commander.

E. If rescue workers have difficulty in breathing or feel abnormalities such as eye pain, immediately take the following measures:
   (a) When rescue workers do not have any special protective equipment:
   Breathe lightly, close the mouth with a handkerchief or a jacket, and escape to a less dangerous area such as a windward location etc.
   (b) When rescue workers feel abnormalities before wearing a mask of air respiratory system:
   Wear a mask loose while opening the manual supply valve to remove harmful gas in the mask, and then tightly wear the mask.
   (c) When rescue workers feel abnormalities such as an offensive odor etc. even though they wear a mask of air respiratory system:
   Open the manual supply valve and immediately escape to a less dangerous area.

F. Before using a gas mask, check the effectiveness of the canister against poisonous gases and the effective time. Avoid using a gas mask in the following cases:
   (a) If the chemical agent and its concentration are not identified.
   (b) In the case of a fire.
   (c) If conducting activities in a disaster area where oxygen concentration is less than 18%.
   (d) If the chemical agent is highly concentrated in the air.

G. Take into account that breathing wearing a gas mask is more difficult than usual.

H. When taking rescue/relief measures for victims, rescue workers should wear gloves etc. to avoid direct touch to the clothes of victims. In this way, avoid a secondary disaster due to a chemical agent adhered to the clothes.

(2) Equipment inspection

A. Troop leaders should conduct inspection services of the equipment used in the disaster site immediately after use. If any chemical agent may be adhered to the equipment, completely decontaminate it before putting it in storage.

B. Depending on the extent of contamination, seal the goods in a container or a plastic bag and dispose them.