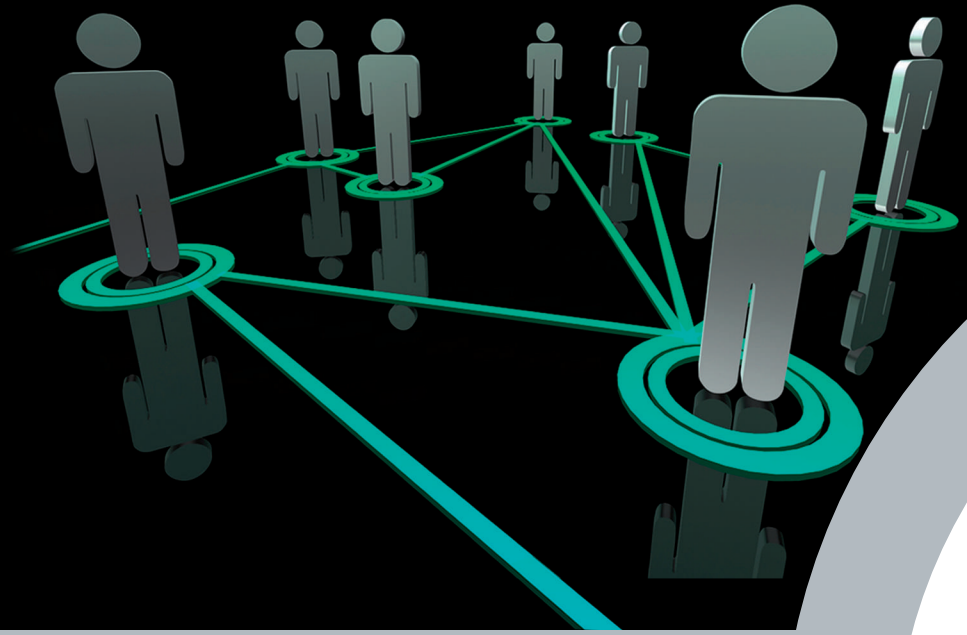
Take Step 1 For a Safe Life!

Istanbul Seismic Risk Mitigation and Emergency Preparedness Project
ISMEP

Disaster Emergency Aid Planning Guide for Industrial and Working Places



ISTANBUL AFAD
PROVINCIAL DISASTER AND EMERGENCY DIRECTORATE

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Dear residents of Istanbul,

Istanbul is a city, which is under the threat of earthquakes and many other disaster risks. In many parts of the world, precautions are taken and some preparation plans are carried out against these kinds of risks. In Turkey, there are studies, which aim at the protection of public buildings, particularly schools and hospitals, and historical monuments and there are retrofitting studies for the whole infrastructure system, especially for transportation and communication, with the participation of the professionals in our country by evaluating the studies made in developed countries.

Physical retrofitting studies have the aim of eliminating the physical threats by earthquakes. But the case of earthquake preparedness is not limited with these activities. What's more important is to change our way of life in such a way to be ready for earthquakes and to be more sensitive for our surrounding.

In order to be ready for earthquakes firstly at individual and then at the national level, we should know about earthquakes, we should develop ourselves by having safe life awareness at our home, in our offices and surrounding, we should get training and above all we should become conscious about what we can do before a possible earthquake strike.

Therefore, we have prepared these awareness raising and training materials to reach you by the means of ISMEP (Istanbul Seismic Risk Mitigation and Emergency Preparedness Project), which is conducted by Istanbul Governorship Provincial Disaster and Emergency Directorate and Istanbul Governorship Special Provincial Administration Istanbul Project Coordination Unit. The documents, which are prepared with the help of specialists from civil and private sectors, are given the last shape after the controls of experts and relevant departments.

Fifteen different training titles have been defined for our editions, which require the preparation of different documents with different themes and appropriate contents for them have been developed to reach all our citizens living in Istanbul and to ensure the institutional preparedness in every sense. We wholeheartedly believe that these training materials which are thought to be appreciated by each institution and individual would meet an important need. Before anything else, to know that our dear citizens would benefit from these activities that would help earthquake preparedness, gratifies us and enlivens our studies.

In Istanbul, where the future is strengthened by us, we share happiness of looking to the future with confidence.

Best regards,
Muammer Güler
Governor of Istanbul

Within the context of Enhancing Emergency Preparedness Capacity, which is the A component of Istanbul Seismic Risk Mitigation and Emergency Preparedness Project, multiple cooperation has a significant role in Community Disaster Preparedness Training Materialsí shaping within the framework of best practice and achieving objectives.

Within the framework of this project, which is a product of long and intensive study, and emerged in the light of profound knowledge and experiences of a good deal of people and institutions, we thank all public corporations and institutions who do not withhold their contributions from us;

Republic of Turkey Prime Ministry 'The Presidency of Disaster and Emergency Management Agency'
Republic of Turkey Prime Ministry Undersecretariat of Treasury and Foreign Trade
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Republic of Turkey Prime Ministry Housing Development Administration
Republic of Turkey Prime Ministry Social Services and Child Protection Agency General Directorate
Republic of Turkey Prime Ministry Presidency of Administration for Handicapped
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Republic of Turkey Ministry of Public Works and Settlement
Republic of Turkey Ministry of Health
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Republic of Turkey Ministry of Industry and Trade
Republic of Turkey Ministry of Environment and Foresty
Istanbul Metropolitan Municipality
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Union of Municipalities and Straits of The Marmara Region
The Turkish Contractors Association
Union of Building Inspector Companies
Istanbul Chamber of Commerce
Istanbul Chamber of Industry
Turkish Red Crescent Society Training Department
Neighbourhood Disaster Volunteers Foundation
Istanbul Anatolian Side Neighbourhood Disaster Volunteers Association
Search and Rescue Association (AKUT)
Istanbul Union of Chamber of Merchants and Craftsmen
Radio Amateurs Association
Confederation of Turkish Chamber of Merchants and Craftsmen Union
Confederation of Turkish Labor Unions
Social Service Employees Association
Turkish Psychological Association
The Psychiatric Association of Turkey
Turkish Federation for the Physically Disabled
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And we thank non-governmental organizations, all publication owners in the bibliography, and project team for their meticulous and devoted efforts.

Republic of Turkey Governorship of Istanbul
Provincial Disaster and Emergency Directorate

CONTENT

I. INTRODUCTION

Great numbers of cities in Turkey are under the threat of extensive risks resulted from natural disasters particularly earthquake. It is known that in consequence of disasters which happen because of people, natural or technological reasons, lots of people will lose their lives or their financial status and what is more their living places will be damaged. Big cities have great risks for the industrial plants in which thousands of people work, petrochemical plants and complex technologies used in those areas and the people who work there and live around those places.

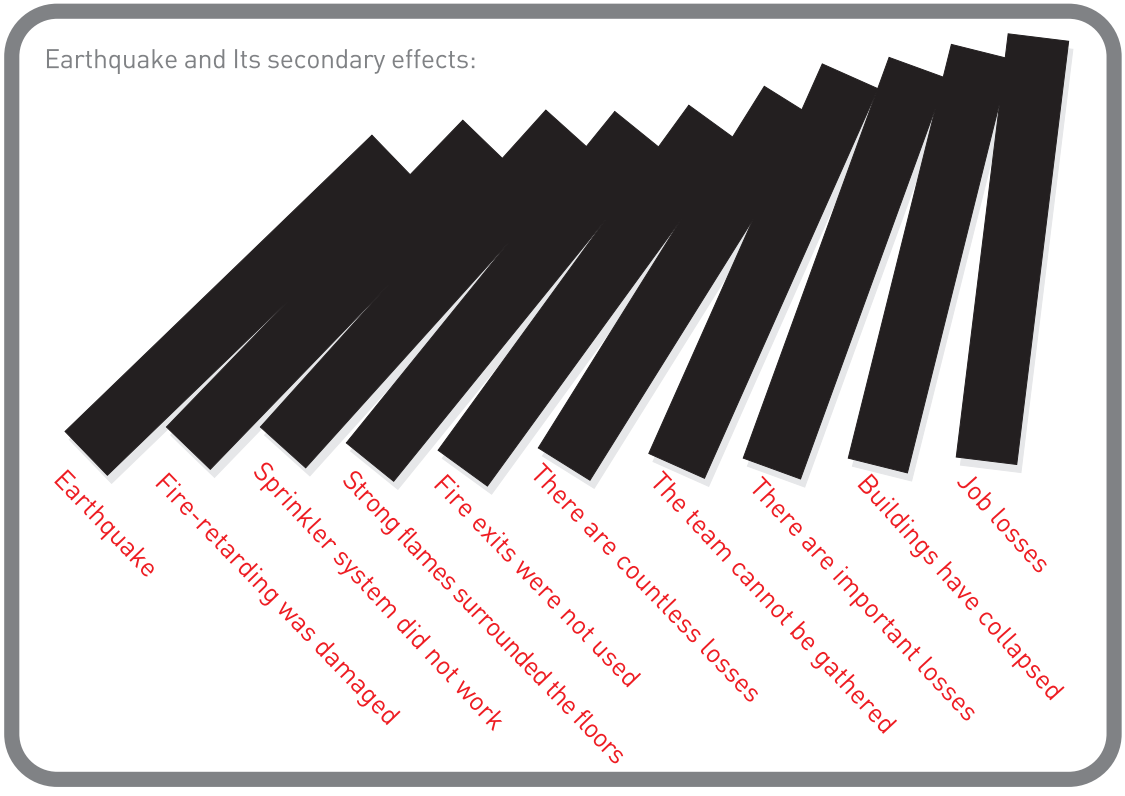
The earthquakes occurred in 1999 in Marmara Region caused thousands of people's death and great financial loses. However if earthquake preparedness and mitigation studies were conducted beforehand these loses would have been reduced significantly.

Istanbul as one of the biggest metropolitans in the world is at a risk of disasters especially earthquakes. It is not very hard to estimate how bad the consequences would be experienced in case of an earthquake affecting Istanbul.

Each segment of the community especially establishments are supposed to take the necessary precautions for a possible earthquake which can result in disaster. Otherwise many people will lose their lives and great financial damage will be experienced. Working places have to take precautions for earthquake, fire and technological accidents. In order to reduce the damage in such cases mitigation and response plans have to be made in the correct way.

It is determined by laws and regulations that working places have to be ready for disasters (Appendix-1 and 2). That's why working places have to take precautions for both fulfilling their responsibilities and providing their establishments' continuity. Actions after the disaster do not provide much benefit for the continuity of the business so pre-disaster studies will help the establishment to get over the damages caused by the disasters.

For all these reasons, working places need planning studies in order to be ready for disasters and emergencies. Taking one step forward for disaster and emergency preparedness can be so powerful that it can save the working places after the disaster!



II. DISASTER MANAGEMENT AND PLANNING

Disasters occur from the negativities stemming from people, nature and technology which causes great damages since community cannot handle them. For example earthquake is a natural event however it can turn into a disaster depending on the structures in the place, preparedness level, capacity of action and similar elements.

Preparations that should be done beforehand and action studies after the disaster can be listed like this:

BEFORE	**Mitigation:** These are the studies which are done in order to prevent risks turn into disaster and minimize the losses and damages. Firstly hazards are determined and risks are examined. Precautions for protection from risks and reducing expected damages are determined, planned and applied.	**Preparation:** These are the studies which include training, planning creating teams aiming to use response capacity effectively and efficiently. Estimation and early warning is also developed and used which is identified as subsidiary protection.
DISASTER		
AFTER	**Response:** These are the studies which are done to prevent loss and damage increase. For example, search and rescue operations or medical response to injured ones are important activities in this step. First of all effect and needs analysis should be made in order to understand the qualifications and size of the incident. According to the size and type of the damage, the units are determined to be activated.	
	Betterment: After response works are over, works are started to turn the life back to normal. These can be listed as the economic size of rehabilitation process, restructuring of natural and artificial environment, meeting the losses as much as possible and precautions for unemployment. Health dimension includes treatment of sicknesses and injuries due to disaster and its adverse conditions, rehabilitating sequels and long time services directed to mental problems.	

As you can understand from the schema, making preparations before the disaster enables people to overcome the disaster with the minimum damage. Minimizing the disaster risk depends on how good "risk management" is done before the disaster. Studies that are conducted after the disasters are directed to crisis management (see Figure 1). In every field in our country including working places and industrial plants, we must pass from crisis management to risk management. In order to prevent disasters and minimize the damages, preparedness, prediction and early warning are important subjects which must be given importance.

This book contains examples and basic information for making disaster and emergency situation plans. Also there is information for corporations and establishments to be ready for a disaster and providing business continuity and determining responsibilities and authority and regulating the supporting sources in case of a disaster.

Figure 1. Disaster and emergency management.

III. PLANNING PROCESS

BEFORE PLANNING

There are some important works that must be carried out before starting to plan. First of all the situation in the working place should be examined and what is available and unavailable should be determined. The most important thing is that, everybody in the place including the executive managers must believe in the planning and they must be ready to support this process from beginning to end, because planning requires long studies and effort. It affects all the employees with its results and it can be beneficial when everybody is included in the process.

Involvement of the executive managers in these studies should particularly be emphasized. If managers do not believe in the subject and give support to planning in every stage, studies will deprive of faith and source. Furthermore all these studies will be perceived as burden by the applicators. If this case occurs, good results cannot be expected from planning studies.

In order to ascertain your current situation and to see how ready your establishment is for a disaster or emergency you can look at the check list in Appendix-3. If you give negative answers to the questions in the list, it means that your establishment needs planning.

DISASTER PREPAREDNESS STARTS AT HOME

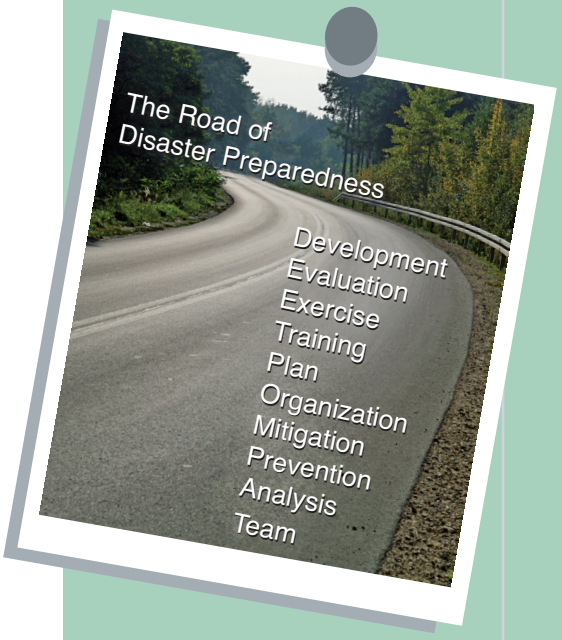
Workers, customers, suppliers and all other people who have a relation with the establishment are the stakeholders of the planning studies. That's why planning studies must be prepared in a way that includes all the stakeholders.

Participation in disaster and emergency planning activities starts at home with the preparation studies. For this reason, awareness of the people who work in the planning process should be raised. Workers can prepare Family Disaster Planning with their families which is very important (Appendix-4 – Family Disaster Planning).

STEPS OF PLANNING

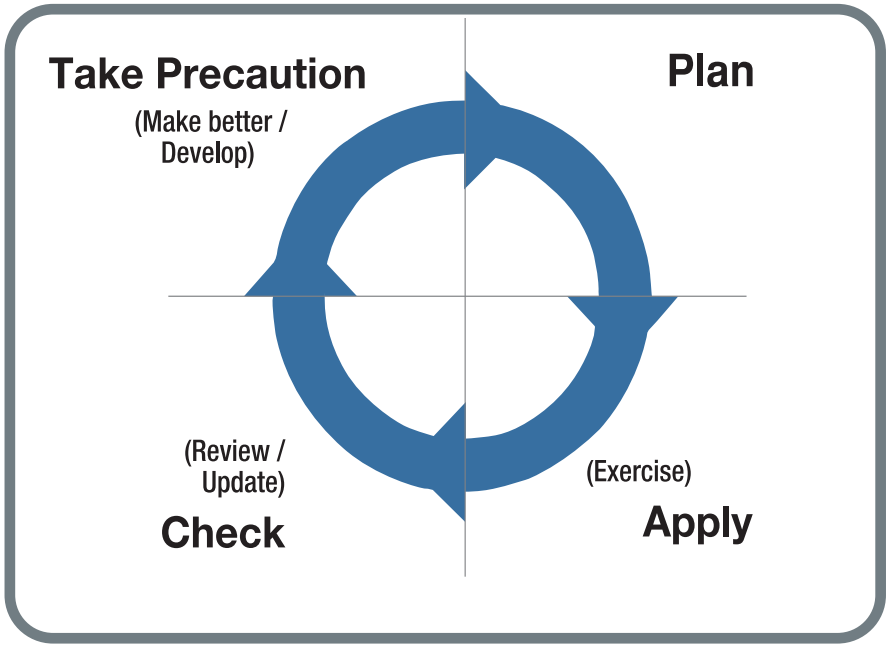
Steps of planning can be summarized like this:

- Organizing teams
- Hazard and risk analysis
- Mitigation planning
- Command and emergency services
- Procedures
- Training and exercises
- Mutual aid
- Emergency equipment



PROVIDING CONTINUITY IN THE PLAN

It is very important to make sure that all the stakeholders know the plan and furthermore updating the plans according to the new conditions. Nobody will have time to read the whole plan during the disaster. So those who are concerned in the plans must read and know them all and apply them via the practices.



IV. FIRST STEP: ORGANIZING THE TEAMS

In preparation studies to disasters and emergencies, two teams must be created. These are "disaster committee" and "planning team".

DISASTER COMITTEE

Disaster management and especially planning necessitate team working. Involvement and support of the executive managers are fundamental. Another important and necessary point is to create a disaster committee which can represent all the related units in the establishment. The committee is different from the planning team since it is not only responsible for routine planning process but it is also responsible for the management of all the studies directed to disaster and emergency from the moment it is constructed. Missions of the committee are listed below:

Before the disaster or emergency situation:

- The committee decides organization, facility, service and precautions according to the regulations and properties of the establishment and determines principals and configurations while planning them.
- The committee gives missions to the personnel in order to prepare the disaster and emergency situation plans according to these configurations. The committee examines the plans and completes them. After signing the plan the committee submits it to the authorities.
- The committee determines, manages and checks the activities which are needed to be practiced and completed according to the formation, facility and precautions which are determined with the plan.
- The committee organizes the necessary collaboration and division of work among the members and units.

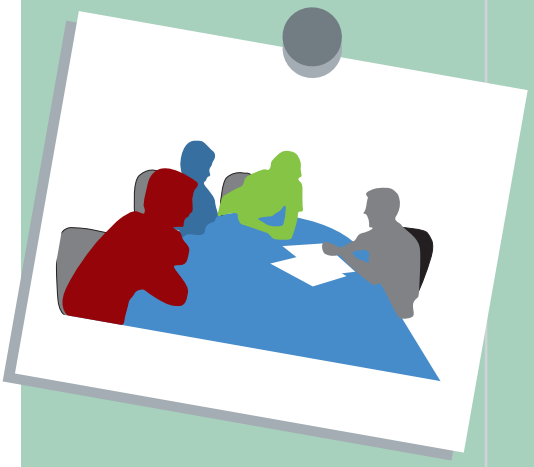
During the disaster or emergency:

- The committee implements all necessary immediate response studies and manages the event.
- The committee puts the disaster and emergency aid plan into action.

After the disaster or emergency:

- According to the damage in the building the committee helps the establishment to be functional again. The committee takes the necessary precaution to replace the lost or used materials.

PLANNING TEAM



In order to start planning, a team should be organized who will make the study. There must be experts and workers from different units in the team. On the other hand senior management should direct the planning team and they should give authority to these people so that they can make the necessary things in the planning process. There should be a certain division in authority between the team leader and team members and each member's job should be described.

The size of the planning team is related to the needs, actions and resources of the establishment. Studies should be practiced in groups to be more advantageous for the following subjects:

- To make the plan adopted by more people
- To increase the time and energy spent by the team members
- To look at the subjects from a wider perspective

Also who will be the active members and who will be the consultant of the plan should be determined. As well as senior manager; there should be contribution from other departments like human resources, workers' health and work safety, environmental health and safety, public relations, marketing, accounting, etc. Group members must be assigned by senior management and their job description must be clear.

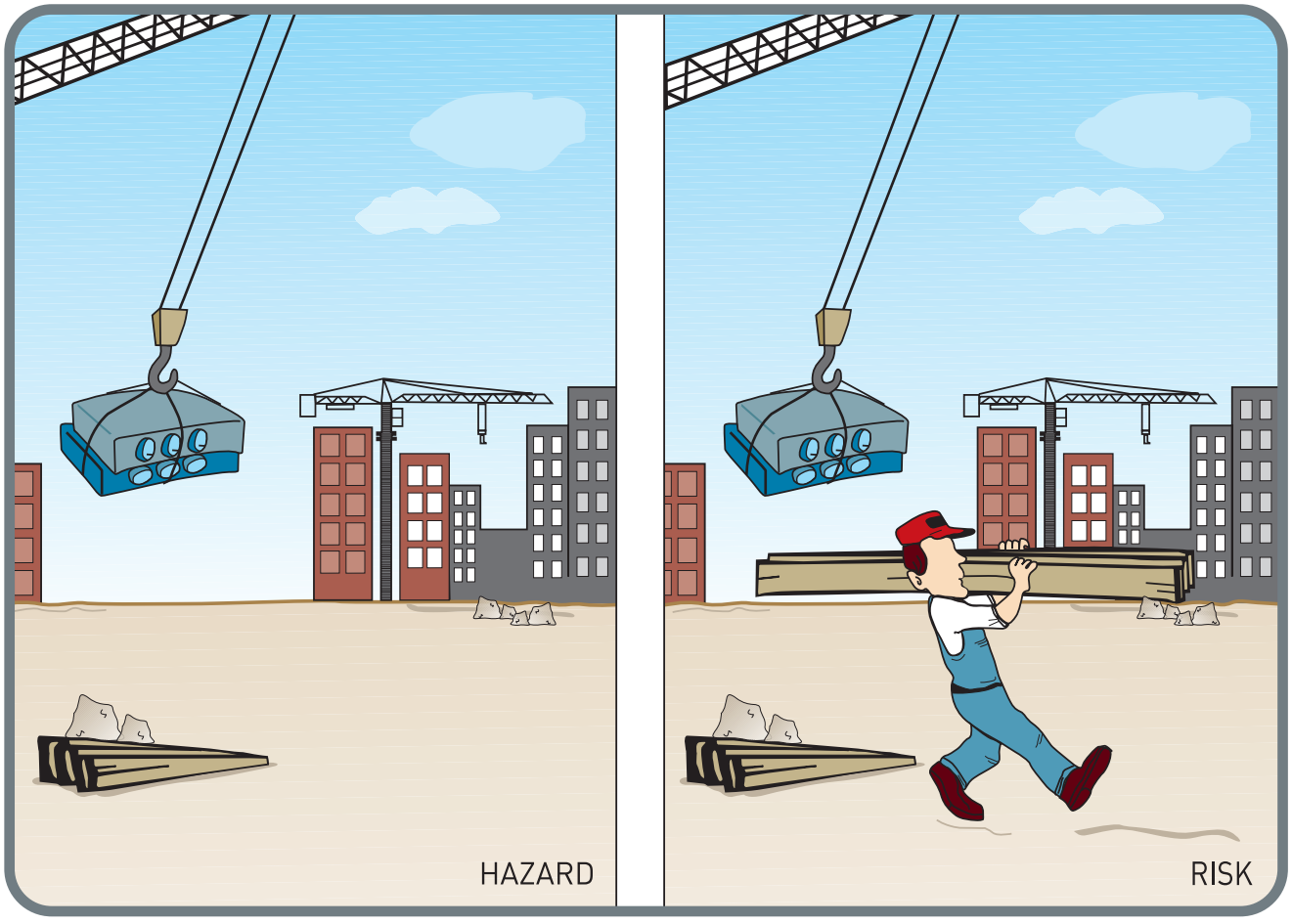
V. SECOND STEP: HAZARD AND RISK ANALYSIS

After planning team is organized, the first thing that should be done is to determine the hazards and risks the establishment is exposed to. Thus, the establishment will know the possible events and take the necessary precautions.

CONCEPTS OF HAZARD AND RISK

Although in daily language the words "hazard" and "risk" are used interchangeably, they represent two different concepts in fact. It is necessary to know the difference between these two concepts in order to make hazard and risk analysis of the establishment. Hazard is an event that has the potential of loss of life and property.

However risk points out the size of damages when a hazardous event occurred. Namely risk is the multiplication of the possibility of the hazard's coming true and the size of the damage in the case the hazardous event occurs.



As it can be understood from the explanations risk can be the result or the next step of the hazard depending on the possibility and the damage of it. That's why in order to determine the existing hazards and risks of an establishment first of all the hazards that threaten the establishment should be checked and then how much these hazards threaten the establishment should be checked.

HAZARD ANALYSIS

Hazard analysis is the process of listing the events which can create hazard for the establishment. The events which can be identified as hazard can vary according to the establishment's situation. While some events like earthquake is a common source of danger for most of the establishments, some other events can be identified in a different way according to the situation. That's why the planning team should determine the events that can create danger for its own establishment.

There is a list below which includes some examples of possible "hazards". The team should determine these hazards according to its own establishment's reality.

- Gas leakage
- Earthquake
- Explosion and fire
- Lightning and static electricity
- Sabotage, terror and social events
- Environmental impacts (neighbor institution and establishments)
- Natural events – negative weather conditions (flood, landslide and storm)
- Work accidents
- Hazards derived from the establishment which can give harm to the surrounding
- Icing and freezing
- Communication troubles
- Emergency health problems (epidemic, occupational illnesses, food poisoning, gas poisoning, etc.)
- Social events
- Hazardous substances
- Supply – transportation accidents
- State of war
- Security (burglary events)
- Contractor – subcontractor works
- Boiler explosion

There are some methods to determine the hazards. These can be listed like this: (There is an example for the forms in Appendix-5.)

- Historical profile: The events occurred in the history of the establishment are in fact the indicators of existing ha-

zards. It is very important to know what kind of events occurred in the history of the establishment, when they occurred and what the results were. This kind of information should be listed. Thus the previous hazards will be listed and it will be possible to make predictions for future. Establishments can prepare forms including their own questions for this kind of a study.

- Gathering information from the employees: Employees are capable of knowing the possible hazards of an establishment. That's why information about this subject can be collected from the employees via forms. Their previous experiences and ideas can be asked. This study also enables the employees to be a part of planning process.

While determining hazards, the events' effects on these elements should be checked:

- Human
- Real estate and possessions
- Service, production, business continuity

However an event does not give harm to people whereas it can be hazardous for service, production and business continuity and vice versa. While determining whether an event is hazardous or not, humans, possessions, service, production and business continuity should all be taken into consideration. This is also necessary while passing from hazard analysis to risk analysis.

While the hazards are determined and hazard analysis is made, although numerical values are the base it is possible to behave subjective to a certain extent.

RISK ANALYSIS

After the hazards are determined, next step is making risk analysis. The aim of the risk analysis is to present how those determined hazards pose a risk for the establishment with numerical data. Presenting hazards with numbers is also helpful to decide which one of the risks is more prior than the others. As a result the establishment sees its future and takes the necessary precautions for greater risks at once and leaves the smaller precautions to time.

The relation between risk and hazard can be formulated like this:

Risk **=** the probability of occurrence of hazard **x** damages that can be caused by the hazard

The probability of occurrence expresses the frequency of the hazard. For example; an earthquake hazard can occur in long years while snow hazard exists every year.

While describing this probability, every establishment can determine time intervals special to itself. Within this book the following time intervals are the base.

Probability	Definition
3	The probability of the hazard occurring in a year is 100%.
2	The probability of the hazard occurring in a year is between 10% and 100%.
1	The probability of the hazard occurring in a year is between 1% and 10%.
0	The probability of the hazard occurring in the following century is less than 1%.

If the hazard occurs people (personnel and customers), possessions, service, productions and business continuity will be affected in a negative way. For example due to the earthquake hazard people lose their lives or get injured, the buildings can be damaged or fall down, business' services can stop for a while.

As it is in the hazard's possibility of occurrence, while calculating the possible damages, establishments can make different groupings and definitions according to their own truths. Within this book the following time intervals are the base:*

Damage	3	2	1	0
Human	It can affect more than 50% of the people.	It can affect 25% to 50% of people.	It can affect 10% to 25% of people.	It can affect less than 10% of people.
Estate	It can affect more than 50% of buildings.	It can affect 25% to 50% of buildings.	It can affect 10% to 25% of buildings.	It can affect less than 10% of buildings.
Service / production / business continuity	It can affect service, production, and business continuity for 4 or more weeks.	It can affect service, production, and business continuity for at least 2 weeks or more.	It can affect service, production, and business continuity for at least 1 week or more.	It can affect service, production, and business continuity for 24 hours or less.

* Stated time intervals should be examined according to the properties of works in the working place and if it is necessary they should be extended or shortened.

The probability of hazard's occurrence and possible damages are determined separately according to the explanations in the previous tables. After that in order to reveal the risk, the probability of hazard's occurrence and possible damages are multiplied. This operation can be done on the following table:

HAZARD AND RISK ANALYSIS													
	HAZARD									RISK			
	Damage					Possibility							
	0	1	2	3		0	1	2	3		0	1	2	3
Human														
Real estate, possessions					x					=				
Service, production, continuty of work														

RISK MATRIX	The damage can be caused by hazard			
The probability of hazard's occurrence	3	2	1	0
3	9	6	3	0
2	6	4	2	0
1	3	2	1	0
0	0	0	0	0

* In order to make risk calculation look at the table in which there is risk matrix.

VI. THIRD STEP: MITIGATION PLANNING

After hazard and risk analyses are done, the establishment knows what kind of risks and hazards their place is confronted. After this step, they have to work for minimizing the risks and possible damages. In order to minimize the risks, either the probability of the hazard's occurrence related to that risk should be eliminated or the possible damages should be minimized. However mostly it is not possible to minimize the probability of hazard's occurrence. For example, earthquake hazard is completely related to nature, so the possibility of it cannot be minimized. Yet minimizing the possible risks in case of an earthquake is in our hands.

Study of mitigation is also the study of minimizing risks. That's why firstly hazard and risk analysis should be done.

MITIGATION

Mitigation studies for disasters can change according to the size of the building and possible hazards and risks that the establishment is confronted. (You can refer to the appropriate points in the check lists given in Appendix-6, 7 and 8.)

Major mitigation activities for hazards are these:

STRUCTURAL MITIGATION

The big earthquakes that are experienced gave important lessons about surviving and getting over the damages. The main condition for this is to live in structures which are designed and built appropriate to the ground and protected later on. Earthquake is a natural event, yet people have an important role in the possible damages of earthquake on the structures. The safety of the structures and the probable problems' elimination after evaluating them are the bases of mitigation studies.

That's why; all the structures in which the business establishments, companies are placed must be safely constructed. The elements mentioned under this title are the bearing elements of a structure. For example columns and girders are the bearing elements of the structure. If there is a possibility of weakness in the structural elements of the establishment, related engineers should check them as part of mitigation studies and if necessary they should work for retrofitting or rebuilding. (For further information about structural elements, you can look at Structural Risk Mitigation and Structural Retrofitting Against Earthquake Training Books.)

It is known that establishments were damaged due to structural risks in earthquakes experienced in Turkey. For example, after 17 August 1999 earthquake 345 member establishments out of 1062 were damaged according to the reports of Kocaeli Chamber of Industry. 20% of members of Kocaeli Chamber of Industry consist of big companies. 34% of small and medium companies and 26% of big companies were damaged. All of the big establishments are insured. The working capacity of member establishments were 70% before the earthquake, however it decreased to 31% a month after the earthquake. This rate increased approximately to 54% after 6 months. Production stopped for nearly 34 days.

Another example of structural damages can be given from Adapazarı. There are 340 industrial establishments in Adapazarı. 23 of them are big industrial establishments. After 1999 earthquake, 34 establishments had severe damage, 73 establishments had moderate damage and 19 establishments had light damage.

Consequently previous earthquake experiences and scientific studies show that the establishments have to do mitigation studies. Moreover these studies are vital for the continuity of the business.

NON-STRUCTURAL MITIGATION

Non-structural components are the ones which do not belong to the carrier system of the building, namely they do not carry the burden of the building. Infilled walls,

chimneys, windows, hanging ceiling, heating systems and stairs are the non-structural components in our buildings. Another group consists of furniture, wardrobe, closet, china cabinet, hall stand, white goods, electric and electronic appliance, tableau, glassware, chandelier, etc. All these items can fall down, slip, crash and cause injuries during an earthquake. (For further information about non-structural components, you can look at Non-structural Risk Mitigation Against Earthquake Training Book.)

Non-structural damages can cause life loss and injuries, losing historical and cultural heritage and great economic loss. Nearly Half of the damages in 1999 earthquake were caused by non-structural reasons. During and just after the tremor lots of people were injured. In a research which is done after the earthquake, it is mentioned that 50% of the injuries and 3% of deaths were due to non-structural components.

There are lots of things to do in a working place in order to minimize the non-structural risks. These things can be exemplified like this:

- Fastening the items which are heavy and stay above the table level and other things like machines, furniture and necessary materials.
- Fastening the items which are hanging from the ceiling or stay above the head level.
- Fastening the electrical devices and supporting them with extra power supply or generator.
- Keeping all the poisonous, inflammable and dangerous materials in closed and safe boxes in which they cannot spill out during an earthquake according to the rule of limit, isolate, eliminate, separate them.
- Organizing educational and awareness programs for the workers and their families.

FIRE MITIGATION

Fire is alone an important threat while it poses a big threat after an earthquake. That's why it is necessary to be aware of the possible damages of fire and to make mitigation studies for it.

Establishments should take precautions for the following subjects and then they should work for improvement:

- Escape ways
- Escape stairs
- Boiler rooms
- Fuel tanks
- Kitchens, stoves and chimneys
- Shelters, car parks and roofs
- Elevators
- Lightning conductors, transformers, power supply and generators
- Electric installations
- Emergency lightning and directing
- Fire detection and alarm systems
- Periodic tests, maintenance and check
- Smoke detectors
- Fire extinguishing systems
- Storing and using hazardous materials
- Fire safety, teams, check and mutual aid

MITIGATION PLAN

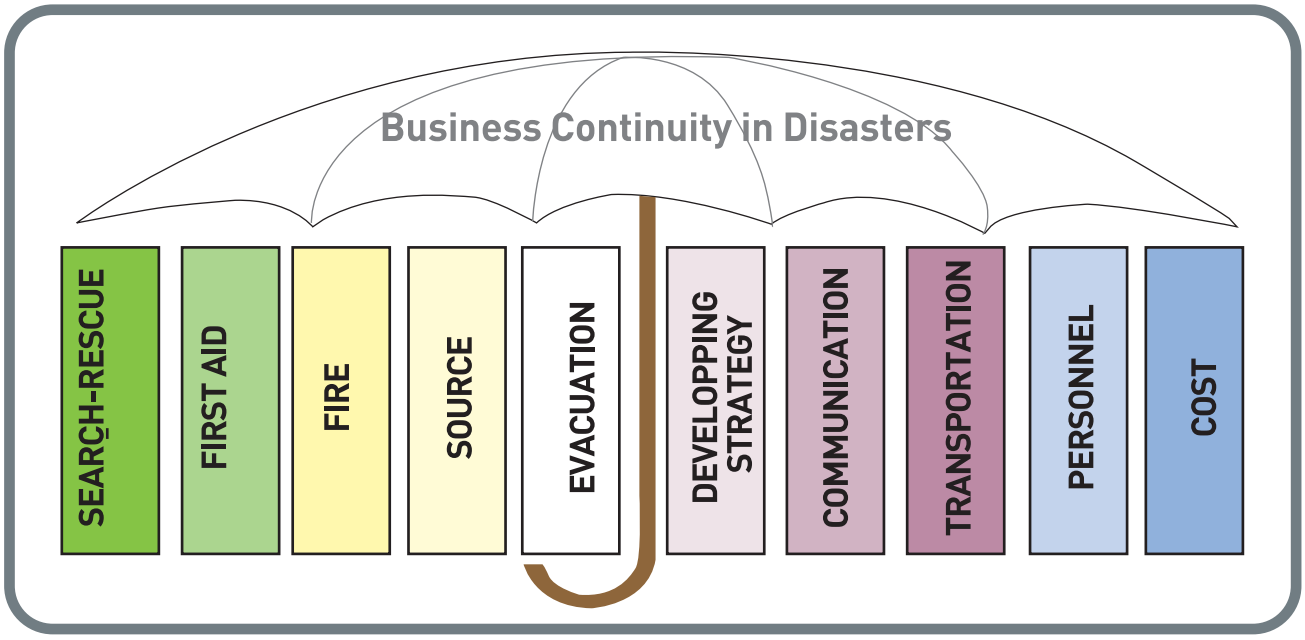
The next step after determining the damaging elements which need to be minimized is to prepare a plan and then the application step comes.

First of all the determined hazards are listed for the mitigation studies. The necessary precautions for each hazard are decided. However some of those precautions might be more important than the others. (You can check Appendix-9 for a filled example of Mitigation Form.)

After the mitigation studies are determined, a plan of action should be prepared. The necessary budget for each mitigation work and time interval in which the work will be done (the beginning and target end dates) must be mentioned. There can be different details in the action plan depending on the size of the establishment, amount of the mitigation works and other related elements. (For an example of Mitigation Plan of Action Form see Appendix-10.)

VII. FORTH STEP: COMMAND AND EMERGENCY SERVICES

The next step in planning studies is setting up of necessary command, check and coordination system and centers for all the works and especially for the response stage emergency services must be created. Everything that can be done in this context and all the subjects which must be known can be summarized like this:

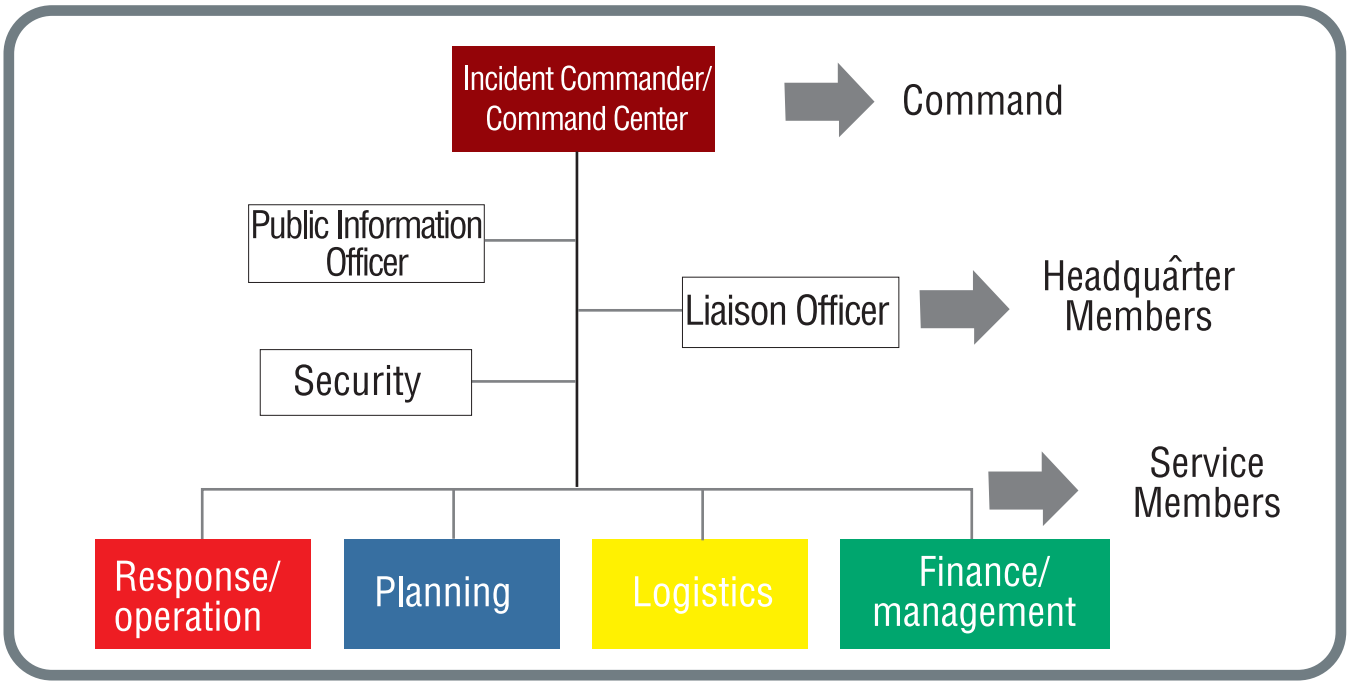


INCIDENT COMMAND SYSTEM

Planning studies should contain preparation and response stages as well as mitigation. That's why everything what is going to be done in case of a disaster or emergency must be taken into consideration in detail. Lots of subjects such as the responsible people and their responsibilities, how the coordination and command systems will function, the teams and members for response stages etc. must be determined and included in the plan.

During the response operations in a disaster or emergency it might be necessary to do lots of things at the same time. It is important for the people to know their turn and mission in the response operations. This is possible with a predetermined structure.

This organization might be possible with a mechanism which is called Incident Command System (ICS) shortly. ICS is a system which is constituted for all the hazards and all levels of emergency actions. This system creates a combination of communication, personnel, equipment, procedures and opportunities which functions in a standardized organization structure.



ICS consists of the following elements:

- Incident commander
- Response/operation
- Information and planning
- Logistics
- Finance and management

Security guard, public information officer and liaison officer who will be connected to incident commander directly should be considered in this system.

Each element's functions are explained in the following chapters.

An example of incident command system created for a medium sized working place is given in Figure 2.

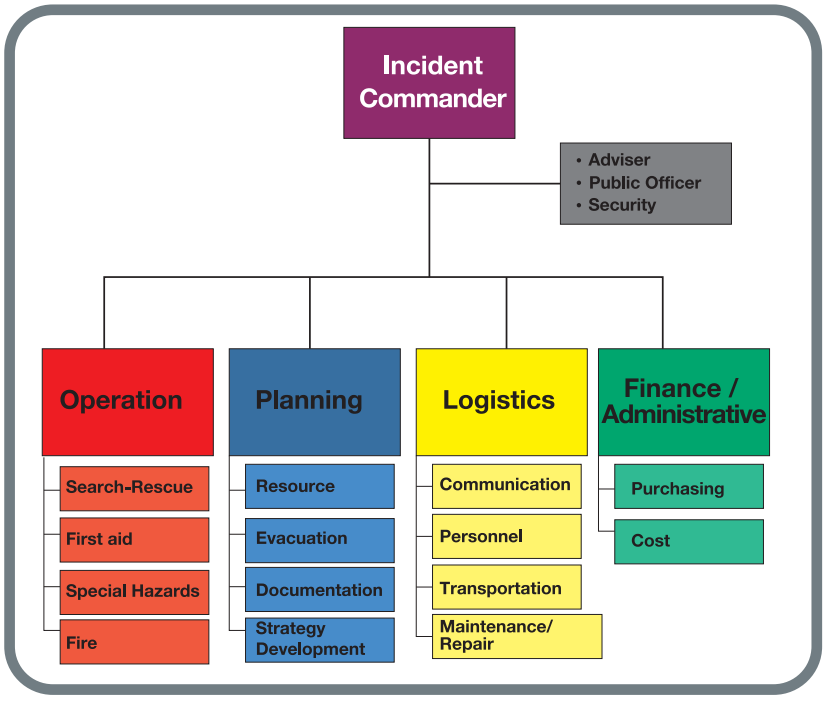


Figure 2. Example of emergency management organization scheme for a medium sized working place.

As the service chief; security chief, work safety officer, civil defense chief and environmental coordinator can take charge. The teams under services should be chosen among the most suitable workers in the establishment.

The personnel number of service and teams who will take place in the incident command system should be determined. When there are less than 50 workers in an establishment, the incident command system can be organized with a smaller scheme similar to the scheme of response team at work (Figure 3).

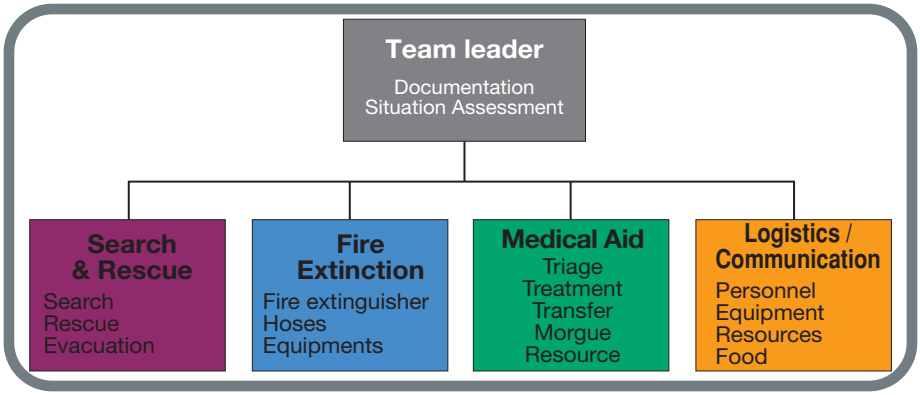
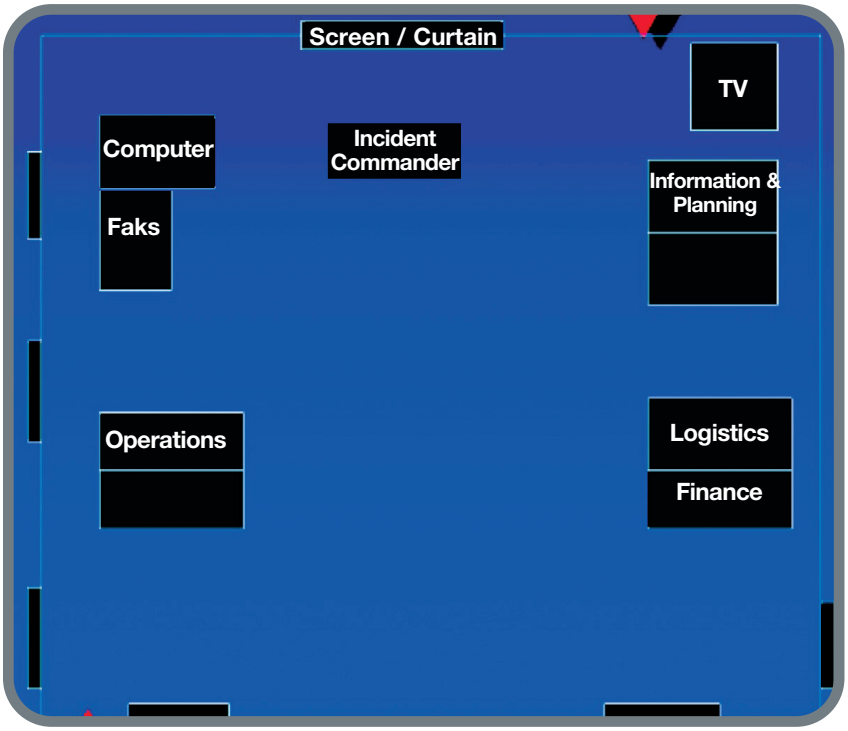


Figure 3. Disaster Response Team for small establishments.

INCIDENT COMMAND CENTER

According to disaster regulation there should be disaster preparedness, response, and a center to manage civil defense actions and transportation in all the institutions for the emergencies. There should also be a command service in the center. The commander of the ICS has important missions while commanding the incident.

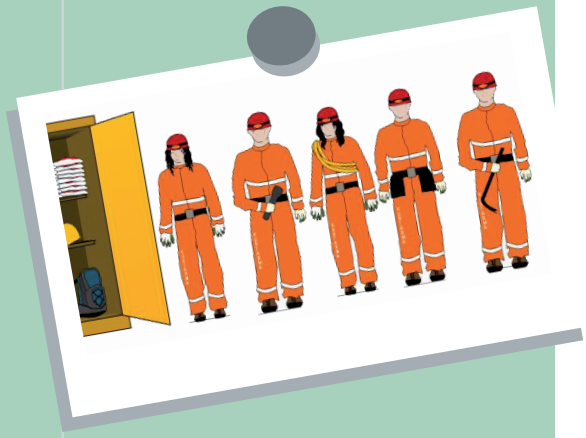


These are the main missions of the center as identified in the regulation:

- Putting the Disaster Emergency Aid Plan into action and spreading the warning and alarm news
- Providing communication, transportation and management among the emergency services
- Contacting with local civil defense, disaster management centers and administrative units and providing mutual aid and collaboration when necessary
- Providing communication, mutual aid, collaboration with neighbour establishments and institutions when necessary
- Evaluating the news of nuclear, biological and chemical hazards and informing the civil defense administrative units around the establishment.

INCIDENT COMMAND

In every response work there should be one person at the head of the operations. This person is responsible for the continuity and proper working of the system. Security guard, public information officer, liaison officer, response/operation unit, information and planning unit, logistics unit and finance/managing unit, which will be explained in the following chapters, will give reports to the responsible person and he/she will evaluate, manage and monitor the situation according to them.



The people, who do not belong to the four main groups connected to the incident commander, also have some missions. These people should be assigned to other basic works which are important in the response step of an incident. Those works can be performed within the concept of the following missions:

Security guard: He/she provides the security of the command center so that the operations work. He/she also makes sure whether the teams are moving safely. Also he/she makes sure of whether the teams move safely or not.

Public information officer: He/she stays in touch with media and delivers the necessary information to press and public opinion.

Liaison officer: He/she is responsible from the relations with other establishments and institutions.

RESPONSE/OPERATION

This is the team that runs all the response and operation works. Within this context there can be search and rescue, fire extinction, immediate medical response, first aid and other similar works. Consequently the teams of search and rescue, fire extinction, immediate medical response, first aid work in this group.

INFORMATION AND PLANNING

During response operations, while search and rescue and other works continue, it is necessary to gather the related information and make plans. Otherwise there can be a great mess and chaos. In order to prevent this someone working connected to the incident commander administers the information related to the incident during response.

LOGISTICS

While the works of response and operation teams and other teams and people's works included in the incident continue a need of logistics occur. Meeting these needs is necessary for the continuity of the operations. For example with the vehicles used by the search and rescue food and drink are provided and transportation is possible with the people who work connected to the incident commander.

FINANCE AND MANAGEMENT

All the works done during the response have a financial and managerial aspect. It will be appropriate if the people working under the incident commander are responsible from the financial and managerial works while the response operations continue. Providing financial resource for all the necessary things and making the related payments and other similar works can be seen within this context.

PREPARATIONS FOR RESPONSE

It is necessary to make some preparations in order to assure the well functioning of the response operations. The following actions can be done in this context:

Gathering personnel information: for emergencies the following information of the personnel can be gathered: a relative of the personnel to contact, the personnel's previous trainings for disasters and emergencies, the exercises that the personnel joined before, the personnel's knowledge and abilities for response operations, the name of the illnesses that the personnel has or drugs that the personnel uses. The form including all the information in which information of emergency actions can be added.

Phone chain: a system of phone calls should be created in order to determine who will call who in case of an emergency. It is very important that the chain works perfectly. At this point the number of the people in the chain and the type of the chain is important. When it is necessary the families of the personnel can be added to the chain. Also the person who will start the chain should be determined beforehand.

Other informing systems: there can be other information systems other than phone chains in the establishments. According to the size of the disaster or emergency the informing system is determined.

Within or out of working hours communication can be made via following ways:

Within working hours:

- With common announce system
- By sending e-mail
- By calling interphones
- By dialing extension number or informing the security
- By informing the central operator
- By sending SMS
- Informing personally
- By sending a message with a proper person
- By using cell phones
- By informing the advisory officer

Out of working hours

- By calling the central from a direct phone
- By using cell phones
- By sending SMS
- By sending e-mail
- Going to the working place personally

Response teams can accomplish the functions that are under the ICS. Teams can be created appropriate to the necessities mentioned in the Disaster Regulation which is also related to the size of the establishment.

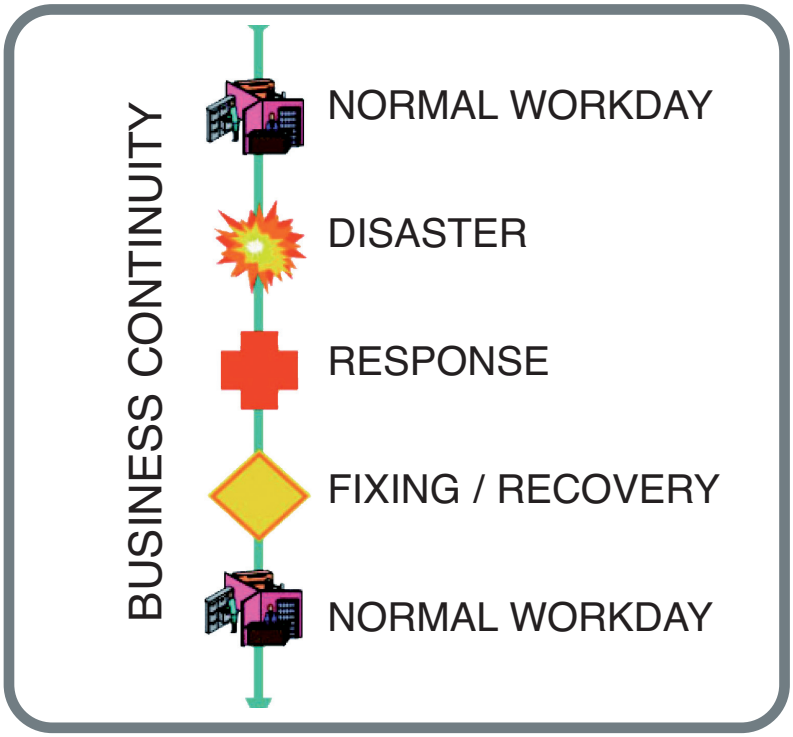
Local disaster volunteers (LDV) make search and rescue works firstly and responses and preparations within this context as well.

This team is trained by official and volunteer establishments and they carry on the response operations in the first hours and days until the professional teams come. The volunteers can respond the small fires, cut off gas, electricity and other infrastructure services, respond small injuries and they can do search and rescue works since they were trained beforehand. In order to do all these things they have to be ready, make plans and be in cooperation with their friends and family members which is very important (You can use Local Disaster Volunteers Training Book for further information).

VIII. FIFTH STEP: PROCEDURES

It is necessary to make some preparations in order to decide how to act in every subject in case of a disaster or emergency. For example, in case of a fire deciding on the process of communication system within the establishment, what the first person who sees the fire should do and the mechanism of counting the personnel after the evacuation, which forms will be used and other important issues should be determined in order to increase the probability of the system's perfect work during and after the event.

The following devices should be developed during planning studies:*	These devices should have the following features:
Standard operating procedures Instructions Check lists Sign-up forms Information cards Maps Other * see Appendix-11 for examples.	Proper to the required usage Complete and perfect Understandable, short and brief Easy to use Enough details Up-to-date Fit for purpose Identified in the Disaster Emergency Plan

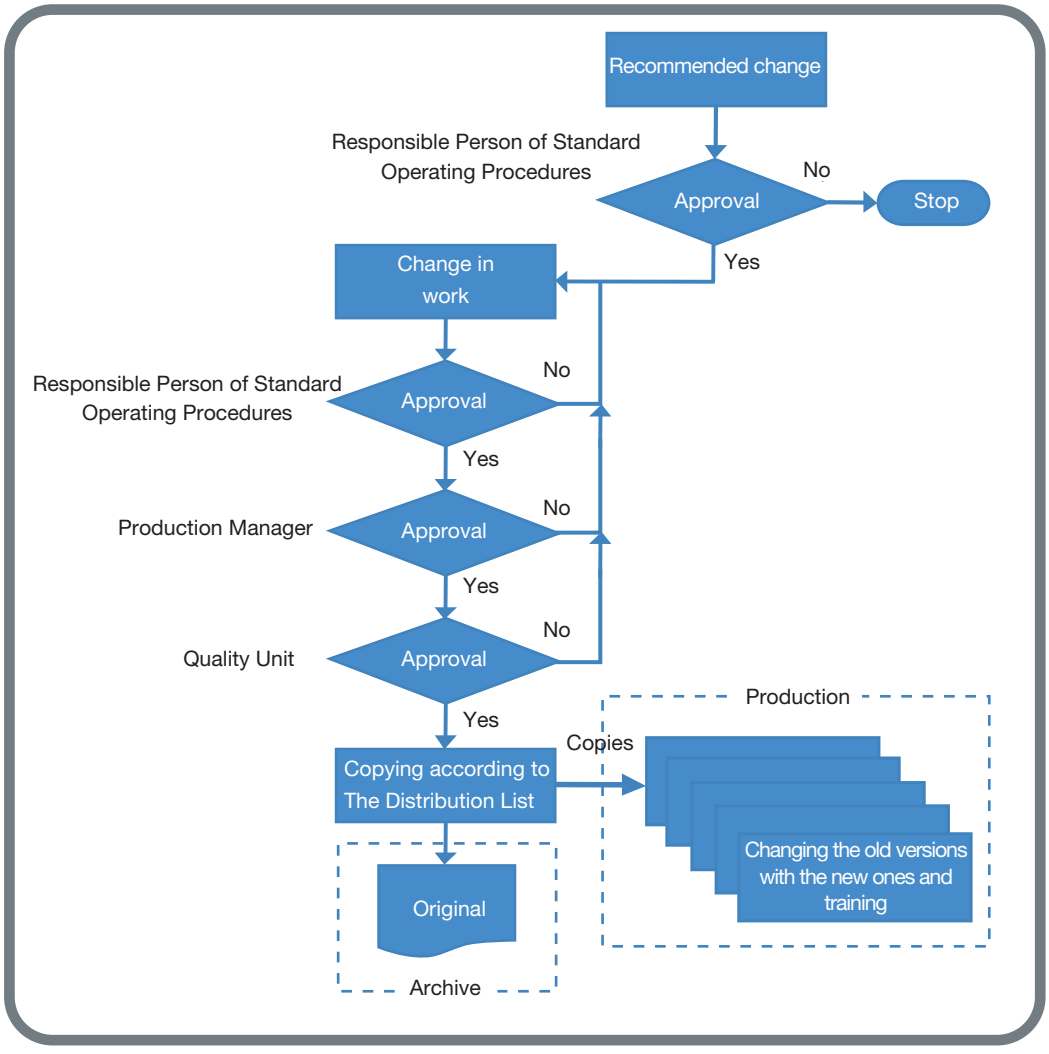


STANDARD OPERATING PROCEDURES

Standard operating procedure (SOP) includes information in order to show all the related people to do the things in the same way. In case of a disaster or emergency, who will do what, where, when and how, is also described in SOP. All the tasks which are necessary to do should be in the written form of SOP prepared beforehand and should be located in an easily accessible place in case of an incident. (For an example of SOP see Appendix-12.)

SOPs are developed in the planning process and added to the "Appendix" part of the plan. The following steps can be followed in this process:

- Making a list of missions
- Defining who will do what, where, when and how
- Determining the steps of each mission
- Determining the standards to fulfill mission
- Testing the procedures
- Checking the SOPs regularly and keeping them up-to-date



INSTRUCTIONS

The instructions/directions related to the activities performed in the working places can be listed like this:

- ISO-9001-2000 Quality Management System
- OHSAS 18001 Occupational Health and Safety Management System
- ISO-14001 Environmental Management System
- Internal company regulations

According to the sector of the company and its activities lots of instructions/directions can be prepared with different contents (For an example of work-flow schema of instructions and directions see Appendix-13).

CHECKLISTS

A checklist is designed to tick off the missions' list, their steps, features, contents and other details when they are completed. Checklists can be in the following forms:

- One box tick off (DONE or AVAILABLE) or an empty box (NOT DONE or NOT AVAILABLE)
- More than one box (for example YES or NO)
- Ratio scale

The checklists are useful in the following cases:

- The tasks which have simple steps
- Keeping a record of what is done or what is not done
- Reminding the important stages
- Evaluations

SIGN-UP FORMS

Sign-up forms are the ones on which calculations, observations and other information are recorded. The main aim here is to keep records of what is done. For example, the forms which are used in order to make damage assessment are in this category. (For an example of forms see Appendix-14.)

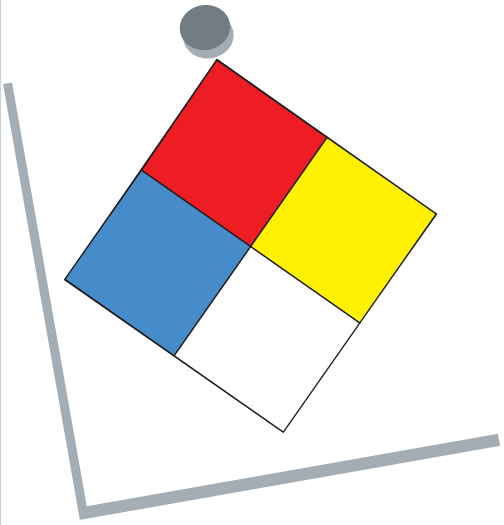
Protecting and Keeping Important Documents

Examples of the documents which should be protected and kept in the working places are listed below:

- Accounting and insurance records
- Engineering plans and projects
- Information of personnel, customers and subcontractor companies (data bank)
- Technological secrets
- Personnel files
- Etc.

It is very important to protect and keep all these documents for the industrial establishments to go on their activities after the emergency. There are some advices about protecting and keeping these documents:

- Labeling the important documents
- Taking copies of the records and preserving them
- Copying the information on CDs and keeping them in vaults
- Keeping copies of important documents in other branch offices
- Preparing a procedure about saving the important documents in emergencies by the working place



INFORMATION CARDS

Information cards are the documents on which necessary information to practice an action is stated properly. They are easy to use and give practical information. Information cards are useful for the following subjects:

- When the useful information is given in graphics for the missions
- The information which can get lost (change periodically)
- The data gathered from different sources

The documents on which basic information about chemicals used in the establishments is stated can be given as an example to information cards (For an example of information Cards see Appendix-15.). These cards can include the following information about a chemical; the material's basic chemical characteristics, the possible hazards related to the material, if any hazard occurs what should be done as first aid response, how to transport and store this material safely. Other information card examples include the followings:

- Reference lists
- Diagrams, labeled demonstrations, graphics and tables
- Information summaries prepared in the matrix form (like tax tables)

MAPS

Maps are important parts of Disaster Emergency Aid Plans. Multiple maps can be added in order to use in different parts of the plan. These can be listed like this:

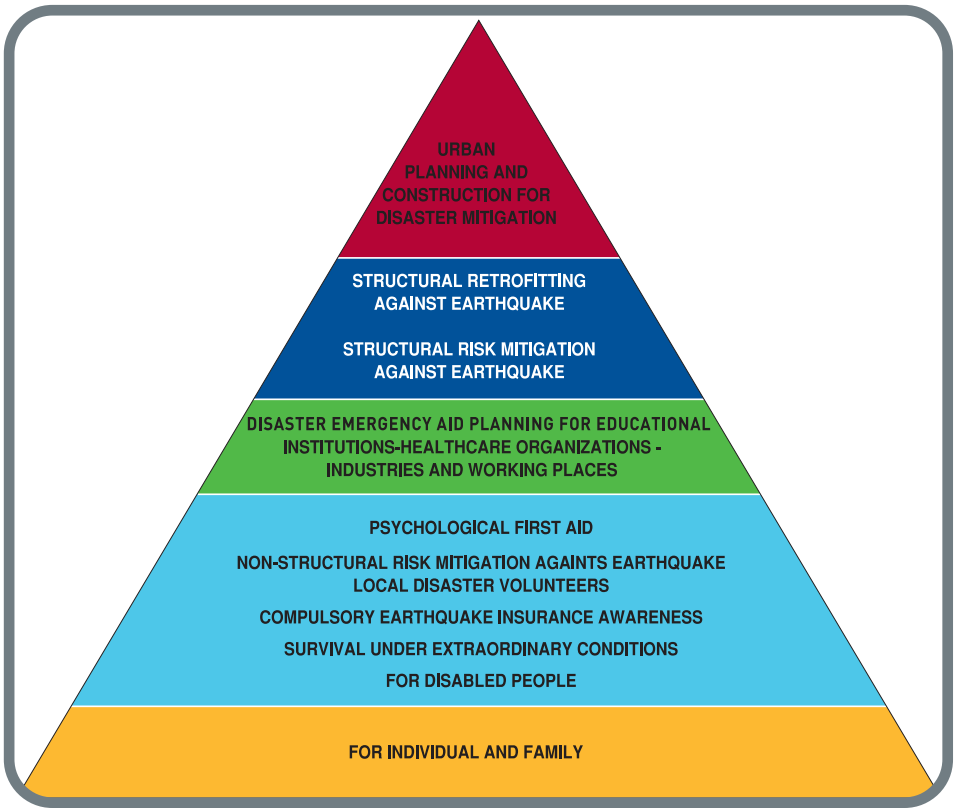
- Geographical characteristics and borders
- Area of responsibility
- The locations of important functions
- Routes of transportation

IX. SIXTH STEP: TRAINING AND EXECISES

Training and exercises are supporting activities which enable practicing what is written in the plans. Trainings are useful in order to teach people what is written in the plans, to make them understand the meanings of the processes in the plans and to help them reach the necessary level of knowledge and ability to practice the tasks within the plan. On the other hand exercises help to practice what is learned in the trainings and to see what is wrong and what is right. Everything that should be known within the training and exercise studies are explained under the related topics below.

TRAINING

According to the needs of the establishment and works planned within the context of the plan there can be need of different trainings. Within this context there can be different trainings in different subjects such as; disaster preparedness, fire extinction, first aid, search and rescue, disaster psychology, team organization and evacuation etc.



In order to prepare the training plan, job definition should be done. A training plan should be designed according to the needs of responsibility areas of workers, visitors, customers, subcontractors/suppliers and managers in the response of emergencies. For 12 months period the following subjects should be determined:

- Who will be trained in each subjects
- Who will give the training
- What kind of training devices will be used
- When and where the trainings will be
- How the evaluations of trainings and documentations will be

Trainings can be in some different ways:

Tutorial sessions: These are the meetings which are held periodically and aimed to reply the questions, determine the needs and mutual knowledge sharing.
Table top work: In these meetings members of Disaster Committee work on created the scenarios and the responsibilities and tasks of each member in case of a disaster are discussed.
Exercise: In these activities what the Disaster Committee and response teams will do during the incident are shown practically. Adapting trainings are organized in order to test functions especially in first aid, alarm, warning and other specific areas.
Evacuation exercise: This exercise includes informing the Disaster committee about the probable dangers on the evacuation way stated in the plan by the workers in the establishment after the exercise. In the light of this information plan is revised.
Realistic exercise: It is the application of an emergency scenario which is prepared close to reality. Personnel, rapid response teams, management and local community organizations join this kind of exercises.

Some basic subjects which should be known within the context of trainings can be summarized like this:

BASIC BEHAVIOURS

Another important subject which should be taught in the trainings and strengthened with the exercises is how to act during a hazard. If more trials are made, people will tend to right actions with their reflexes when the hazard begins.

Basic actions which should be practiced in general hazards are like the ones below (For further information about basic actions during a hazard check First 72 Hours for The Individual and a Family Training Book):

Hazard	Action
Earthquake	Drop – cover - hold
Fire	Evacuation
Smoke alarm	Shelter in place
Airplane crash	Drop – cover - hold
Bomb or bomb thread	Drop – cover – hold and/or evacuation
Hazardous material leakage	Shelter in place
Armed assault or hidden fire	Lockdown
Severe storm	Shelter in place; Drop – cover - hold Lockdown, evacuation

EVACUATION

Another subject about exercises is evacuation. Evacuation works have a critical importance in emergencies. When the plan is being designed the following subjects should be taken into consideration; evacuation behavior that should be considered, assembly area, partner system, floor and location plans.

Evacuation Behavior That Should Be Considered

Evacuation decision and application occurs in different forms in different hazards. For example; the moment fire starts evacuation can be started too. However when the earthquake starts, people should wait until the earthquake and trembling are over then evacuation can be started. That's why different evacuation plans should be designed according to different types of hazards.

The subjects which should be paid attention during evacuation can be listed like this:

- Order and safety should be the base instead of speed.
- People should help the victims without putting themselves at risk or provide them help.
- People should leave the places without being anxious and (without putting themselves into danger) take their personal properties and protective materials and also they should take first aid kits if necessary.
- People should go to the nearest exits calmly and quietly, people should avoid unnecessary hurriedness.
- People should avoid unnecessary dialogues and should be careful about walking in the line continually.
- Stairs should be used orderly and there should not be a jam on the way.
- If there is smoke in the place, drop to the floor and follow the nearest wall and crawl towards exit.
- If there is a fire hazard, during evacuation closed doors should be checked with the back of hands in order to understand whether they are hot or not. If the door is cold then it should be opened carefully and go on walking if it is safe.
- At the end of evacuation everyone should go to assembly area and obey the directions of the incident commander.

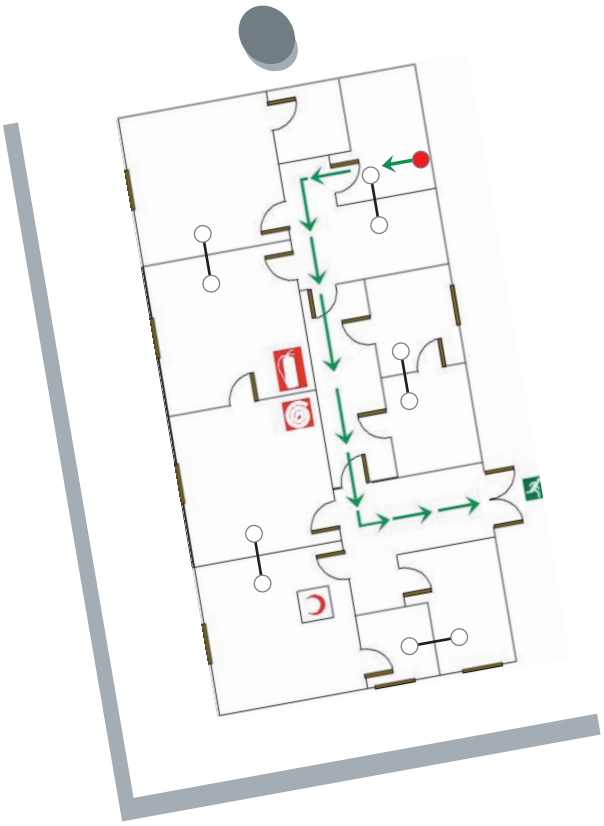
Assembly Area

The people evacuated from the structures gather in the assembly areas. That's why one or more assembly areas should be determined before according to the situations. Stock should be taken, people's conditions should be checked and the first evaluation should be made after the incident.

Partner System

In order to create a checked evacuation system partner system is another mechanism to be used. The purpose of this system is to enable people to move together with other people or the units in the establishment move together with other units and be evacuated together. First of all everyone is responsible from his/her partner or unit and he/she has to be sure about the evacuation of his/her partner person or unit. Partner system functions as a device which checks itself. For example, people who sit next to each other or work on the same production line can be partner of a different unit on the same floor. Partner people or units first check physical condition of each other and then they are evacuated together from the same way.

Floor and Location Plans



Floor and location plans are needed both during evacuation and response after the incident. These plans must be prepared for each related place and they should be preserved both in Disaster and Emergency Plan and in different places in the establishment with sufficient copies. This will be very useful for easy access during the incident.

Floor and location plans can be prepared with backups as A and B plans according to the size of the establishment.

Those plans can be listed like this:

Indoor Response Plans: This plan includes response operations in indoors. These plans are considered for the hazards that people can encounter when they have to stay in closed areas. For example, how to use indoors when there is severe storm and snow should be planned. Where the command center and first aid center will be and where people will wait and other similar subjects should be determined before and marked on the plan.

Outdoor Response Plans: This plan includes response operations in outdoors. For example, outdoor response plans can be used in case of an earthquake. In these plans; assembly area, where dead and injured people will be gathered, first aid area, command center, psychological first aid center and other needed areas should be determined and marked on the map, sketch or plan.

Evacuation Plans: Evacuation can be conducted to inside or outside according to the type of hazard. For example, in case of an earthquake or fire evacuation is from closed areas to open areas whereas during severe storms people should move from open areas to closed areas. Depending on the possible hazard that can occur in the establishment suitable evacuation plans are prepared. Within this context evacuation ways and who will use which way should be determined.

EXERCISES

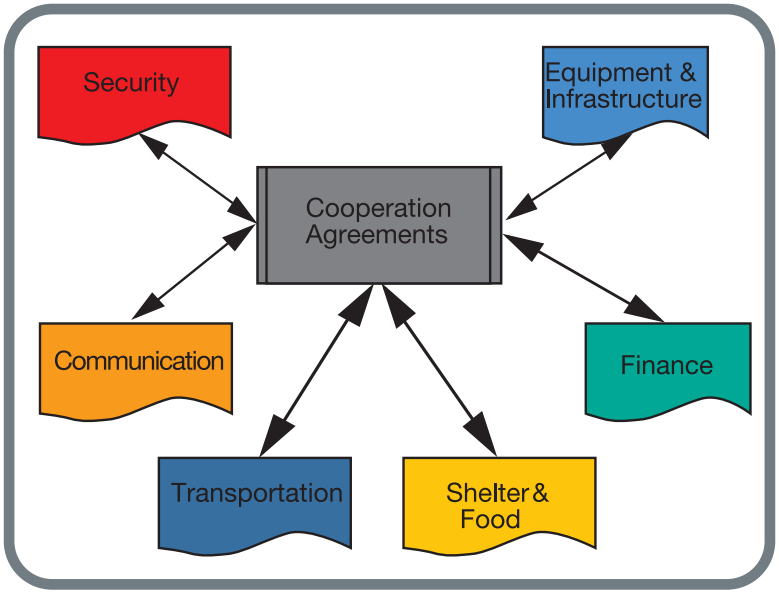
Exercises are intended to practice the actions set forth in the plans and in fact exercises are in a way applied training. There should be at least one or more exercises in every establishment every year. Exercise can be designed in different subjects and sizes according to the context of the plans. In different subjects such as behavior during earthquake, evacuation after the earthquake, evacuation during fire, first aid, search and rescue, response to fire, team organization etc. separate or combined exercises can be organized. These works should be evaluated in order to see whether the works are going on according to the plans or not. In the light of these evaluations what is wrong and what is right is seen and then the necessary changes can be done in the plans (For an example of Exercise Evaluation Form see Appendix 16.).

X. SEVENTH STEP: MUTUAL AID

During a disaster or emergency people might need help from external sources. Once the subjects that might need help are determined and considered within the plans proper works can be done. What's more according to needs different agreements can be signed with relevant foundations and institutions beforehand.

According to their sizes establishments should consider the points listed below and decide in which they will need help from outside and take precautions about them:

- Transportation
- Communication
- Installation and infrastructure
- Food – drink
- Security
- Financial issues



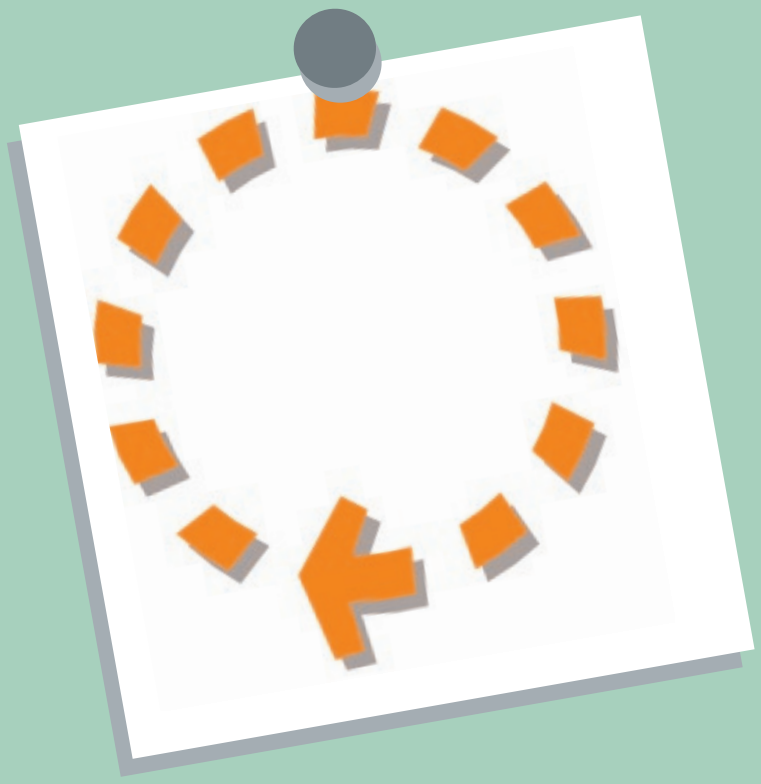
Establishments, according to their area of need, can sign agreements with different foundations and institutions directed to short or middle term helps after disasters or emergencies. On the subject of receiving support from volunteers Local Disaster Volunteers is a significant source (For further information about this subject check Disaster Preparedness for Local Disaster Volunteers Training Book).

XI. EIGHTH STEP: EMERGENCY EQUIPMENT

After disaster and emergency there can be a need of different materials. That's why it might be essential for the establishments if they make a planning about the materials which they can need for emergencies. According to the size and type of the event, establishments should be ready by taking into consideration the probability of not getting any help from outside approximately for the first 72 hours.

Within this context the following subjects should be considered:

- A material list of needed items is prepared. According to the special needs of emergency relief teams and workers and visitors of the establishments' needs, general necessary materials might be determined.
- Materials should be kept in proper and safe places. Who will be responsible from each material is also determined before.
- The materials which are certainly necessary but cannot be reached and stored by the establishment should be determined and a plan should be made for them. By signing agreements with foundations and institutions, materials can be provided after the incident.
- These materials should be checked regularly and in case of becoming old or damaged they should be repaired or renewed.
- When the needs are considered food should be taken into consideration. While food is stored, storage conditions and expiration dates should be checked and they should be renewed when necessary.
- The needs of workers in the establishment should also be taken into consideration



APPENDIXES

1. Legislation List about Disaster and Emergency Issues
2. Records that will be kept for Health and Safety at work, Documents that will be arranged and Checks to be done
3. Check List of Disaster Emergency Plan for Working Places
4. Family Disaster Plan
5. An example of Hazard Profile Form
6. An example of Hazard Check List
7. An example of Hazard Check List for Open Areas
8. An example of Hazard Check List for Production and Storage Areas
9. An example of Mitigation Form
10. An example for Mitigation Action Plan
11. Examples of Possible Standard Operations, Check Lists, Work Directions and Information Cards
12. An example for Standard Operating Procedure
13. An example for Flow Chart of Necessary Instructions which should be applied in Fire Brigade Incident
14. An example of Accident Evaluation Form
15. An example for Information Cards
16. An example for Exercise Evaluation Form

APPENDIX-1 Legislation List about Disaster and Emergency Issues

Legislation No	Subject	Official Gazette DATE / NUMBER
	Regulations About the Buildings which are going to be build in Earthquake Zones	06.03.2006 / 26100
88/12777	Regulations concerning Emergency Organizations related to Disasters and Planning Principles	08.05.1988 / 19808
	Regulation of Heavy and Hazardous Works	16.06.2004 / 25494
	Regulation of Elevator	15.02.2003 / 25021
2565	Law of Military Forbidden Zones and Security Zones	22.12.1981 / 17552
6551	Law about Gun Powder and Explosive Materials and their details and removing Hunting Materials from exclusivity	18.05.1955 / 9009
180	Decree having force of law about the organizations and tasks of the Ministry of Public Works and Settlement	14.12.1983 / 18251
5188	Law concerning Private Security Services	26.06.2004 / 25504
5393	Law of Municipality	13.07.2005 / 25874
	Building Bylaws of Unplanned Areas	02.11.1985 / 18916
2960	Bosphorus Law	22.11.1983 / 18229
2872	Environmental Law	11.08.1983 / 18132
	Regulation of Environmental Impact Assessment (IAS)	16.12.2003 / 25318
4922	Law about Protecting Life and Property on sea	14.06.1946 / 6333
4536	Law concerning the Principles which will be applied to Explosive Materials and Suspicious Substances seen Nationwide and on seas	27.02.2000 / 23977
	Regulation of Internal Electrical Installation	04.11.1984 / 18565
4737	Law of Industrial Zones	19.01.2002 / 24645

	Regulation concerning Business Work License	10.08.2005 / 25902
	Instruction of Fire and Natural Disaster Prevention and Fire Extinction in Gebze Organized Industrial Zone	1995
775	Anti-squatting Law	30.07.1966 / 12362
	Regulation of Coal Gas Interior Wiring and Technical Contract	24.03.1953 / 8367
3152	Law about the Organization and tasks of the Ministry of Internal Affairs	23.02.1985 / 18675
5442	Law of Provincial Administration	18.06.1949 / 7236
3194	Construction Law	09.05.1985 / 18749
96/8442	Istanbul Port Authority Regulations	06.09.1996 / 22749
4857	Labor Law	10.6.2003 / 25134
7/7583	Occupational Safety and Health Regulation	11.01.1974, Sayı: 14765
	Municipal Fire Brigade Regulations	21.10.2006 / 26326
7/10357	Regulation about taking precautions for prevention, extinguishing and rescue of fire that can occur on land or occur on sea, harbor or shore and that can reach and spread to land or fire that can occur on land and reach shore, harbor or sea	08.09.1975 / 15350
2918	Highway Traffic Law	18.10.1983 / 18195
442	Village Law	07.04.1924 / 68
618	Harbor Law	20.04.1925 / 95
84/8428	Regulation concerning workers health and job safety who will be hired to work in mine and quarries	22.10.1984 / 18553
83/7405	Regulation concerning giving license to nuclear facilities	19.12.1983 / 18256
2935	Emergency Law	27.10.1983 / 18204
6831	Forest Law	08.09.1956 / 9402
7/12520	Regulation about the tasks of officers who will work in preventing and extinguishing forest fires	09.10.1976 / 15729

7/7551	Regulation about taking precautions in working places where inflammable, explosive, hazardous and dangerous materials are used in works	24.12.1973 / 14752
	Regulation concerning the methods and principles of disposing of the explosive materials	19.09.1989 / 20287
85/9727	Radiation Safety Regulations	07.09.1985 / 18861
	Regulation of protection against sabotage	28.12.1988 / 20033
7397	Law on check of insurance companies	30.12.1959 / 10394
4/11715	Regulation about applying principles to important buildings and establishments with city and town plans with respect to civil defense	06.07.1959 / 10245
	Regulation about necessary precautions and organizations which will be created by public with respect to civil defense	17.06.1966 / 12325
6/3150	Regulation of formation and precautions about civil defense	18.07.1964 / 11757
7126	Civil Defense Law	13.06.1958 / 9931
	Regulation of hazardous waste check	14.03.2005 / 25755
3/14831	Regulation about transportation of hazardous material by merchant ships	08.10.1952 / 8227
	Hazardous chemicals regulation	11.07.1993 / 21634
87/12028	Regulation concerning the principles and methods of manufacture, import, transportation, housing, storage, sale, usage, disposal and inspection of hunting equipments and similar items made of unmonopolized explosive materials	29.09.1987 / 19589 (Alteration: Regulation no.2001/2443 dated 23.05.2001 and 24410 numbered Official Gazette)
4691	Law of Technology Development Areas	06.07.2001 / 24454
3/7040	Regulation about technical conditions of merchant ships	15.04.1948 / 6884
8948	Regulation concerning the qualification and certification of tourism facilities	21.06.2005 / 25852
98/11860	Maritime Traffic Regulations for the Turkish Straits	06.11.1998 / 23515

5237	Turkish Criminal Law	12.10.2004 / 25611
6762	Turkish Commercial Code	09.07.1956 / 9353
3348	Law about the tasks and organization of the Ministry of Transport and Communication	17.04.1987 / 19434
7269	Law concerning necessary precautions and helps for disasters effective on public life	25.5.1959 / 10213
4708	Construction Inspection Law	13.07.2001, Sayı:24461
	Construction Inspection Application Regulations	05.02.2008 / 26778
7/8602	Occupational safety and health regulation	12.09.1974 / 15004
587	Statutory Decree concerning compulsory earthquake insurance	27.12.1999 / 23999

APPENDIX-2 Records that will be kept for Health and Safety at work, Documents that will be arranged and Controls to be done

Records that will be kept at work, Documents that will be arranged and Checks to be done	
Records belonging to workers which should be kept	
Labor Contract	4857 Numbered Labor Law (Article 8)
Employee Personnel File	4857 Numbered Labor Law (Article 75)
Certificating of Working Time	Regulation of Working Time concerning Labor Law (Article 9)
Work License	4857 Numbered Labor Law (Article 28)
Certifying The Training	Regulation about taking precautions in working places where inflammable, explosive, hazardous and dangerous materials are used in works (Article 73) Regulation about methods and principles of occupational health and safety trainings (Article 17)
Female Worker Identities	Regulation about the working conditions of female workers in night shifts of industrial works (Article 8)
Identities of workers who work in heavy and hazardous jobs	Regulation of heavy and hazardous jobs (Article 7)
Risk Assessment	Regulation of occupational health and safety
Risk assessment in studies with cancerogenic and mutagen materials	Regulation about health and safety measures in studies with cancerogenic and mutagen materials (Article 5)
Risk assessment in case of finding hazardous chemical material	Regulation about health and safety measures in studies with chemical materials (Article 6)
Risk assessment in case of exposure to vibration	Regulation of vibration (Article 6) (This law became valid on 23 December 2006.)
Risk assessment in case of exposure to noise	Regulation of noise (Article 6)
Document of Protection from Explosion	Regulation about protection of workers from the hazards of explosive surroundings (Article 10)
Research for minimizing the use of cancerogenic and mutagen materials	Regulation about health and safety measures in studies with cancerogenic and mutagen materials (Article 6)
Emergency Plan for Preventing and Minimizing Exposure	Regulation about health and safety measures in studies with cancerogenic and mutagen materials (Article 7)
Keeping Records	Regulation about health and safety measures in studies with cancerogenic and mutagen materials (Article 17)
Documents which are arrenged by occupational health and safety assemblies	Regulation about occupational health and safety assemblies (Article 10)

Documents which will be arranged by health unit of the working place	
Annual Work Plan	Regulation about methods and principles of works and tasks of health units and doctors of working places (Article 8)
Annual Assessment Report	Regulation about methods and principles of works and tasks of health units and doctors of working places (Article 9)
Statistics and Registration	Regulation about methods and principles of works and tasks of health units and doctors of working places (Article 14)
Documents which will be arranged by the doctor of the working place	Regulation about methods and principles of works and tasks of health units and doctors of working places (Article 22)
Documents which will be arranged by the nurse and health officer of the working place	Regulation about methods and principles of works and tasks of health units and doctors of working places (Article 30)
Documents which will be arranged by occupational safety expert	Regulation about methods and principles of works, tasks, authorization and responsibilities of engineers or technicians appointed with occupational safety (Article 12)
Accident Records	Regulation of occupational health and safety (Article 9)
Accident Reports	Regulation of occupational health and safety (Article 9)
Training Program	Regulation about methods and principles of workers' training of occupational health and safety
Assessment and Evaluation	Regulation about methods and principles of workers' training of occupational health and safety (Article 16)
Contract of working place's doctor, Certificate of working place's doctor, Diploma of nurse, health officer Certificate of firs aid and rescue training, Monthly working report, Reports related to occupational accident	
Declarations which will be made by employer	
Declaration of the working place	
Declaration of occupational accidents and illnesses	4857 Numbered Labor Law (Article 77)
Declaration of jobs which require maximum 7,5 hours or less daily work regarding health rules	4857 Numbered Labor Law (Article 63)

Night Works	4857 Numbered Labor Law (Article 69)
Employing female workers in night shifts	4857 Numbered Labor Law (Article 73)
Giving information to authorities about works with cancerogenic and mutagen materials	Regulation about health and safety measures in studies with cancerogenic and mutagen materials (Article 8)
Declaring occupational illnesses	Regulation about health and safety measures in studies with cancerogenic and mutagen materials (Article 16)
Declaring the end of activities in the working place	Regulation about health and safety measures in studies with cancerogenic and mutagen materials (Article 17)
Declaring the end of activities with chemical materials in the working place	Regulation about health and safety measures in studies with chemical materials (Article 12)
Occupational Safety Expert	Regulation about methods and principles of works, tasks, authorization and responsibilities of engineers or technicians appointed with occupational safety (Article 15, 16)
Declaring the doctor of the working place	Regulation about methods and principles of works and tasks of health units and doctors of working places (Article 25, 26)
Permissions which will be gotten by the employer	
Establishment and operation license	4857 Numbered Labor Law (Article 78)
Getting permission to work with prohibited chemical materials	Regulation about health and safety measures in studies with chemical materials (Article 11)
Permission for removing the reasons of business interruption	4857 Numbered Labor Law (Article 79) Regulation concerning suspension of works in the working places or closing the working place Article 12, 13, 15, 16
Permission to start working temporarily in the working place or permission to open the closed working place again	

APPENDIX-3 Check List of Disaster Emergency Plan for Working Places

- ☐ Are there copies of important documents in other branches of the firm/establishment or are they backed up in safe places?
- ☐ Is there a Disaster and Emergency Aid Plan including all the hazards in your establishment?
- ☐ Is your personnel trained about emergency procedures?
- ☐ Do you try your Disaster and Emergency Aid Plan adequately? Do you make necessary changes on the plan?
- ☐ Do your responsible personnel know the place of Disaster and Emergency Aid Plan?
- ☐ Do your new personnel take necessary training about Disaster and Emergency Aid Plan?
- ☐ Do your establishment manager and other responsible personnel know when help will come after the emergency occurred and they reached the relevant department by phone?
- ☐ Do your personnel have necessary training to deal with emergencies until help comes?
- ☐ Is there anyone who took special training for emergencies among your personnel?
- ☐ Are emergency numbers on one click to direct calling?
- ☐ Are emergency numbers (fire brigade, ambulance, and police) in accessible places to be seen by all the workers?
- ☐ Do you have sufficient vehicles for transportation of your personnel to safe places during evacuation?
- ☐ Do fire brigade and local security units have your establishment's general layout?
- ☐ Does the management of the establishment invite security units and fire brigade to the working place for identification trip every year?
- ☐ Do the fire, evacuation and rescue exercises are made in the time slots when there is heavy human and/or vehicle traffic?
- ☐ Do you have evacuation plans?
- ☐ Do you have a plan if the emergency occurs when the personnel is in the service vehicles?
- ☐ Who has the keys of locked doors out of normal times and working hours? Is it possible to access them in emergencies?
- ☐ Are there backups of important documents?

APPENDIX-4 Family Disaster Plan

DISASTER PLAN OF ..... FAMILY

The person to call out of the city
Name _____
City _____
(Home number) _____
(Work Number) _____

The person to call in the city
Name _____
(Home number) _____
(Work number) _____

Relative
Name _____
City _____
(Home number) _____
(Work number) _____

Work numbers of the family
Father _____ Mother _____
Other _____

Emergency phone numbers
In an emergency call 155 or 112 or call these numbers in your city:
Police _____
Fire department _____
Hospital _____

Meeting places
1. At home _____
2. Next to home _____
3. Away from home (if you can not return to home)
_____

Address _____
Phone _____
The first route _____
_____

FAMILY DISASTER PREPAREDNESS WORK PLAN AND CHECK LIST

- ☐ We have defined tne insecure places at home (for instance; window fronts, sides of big, heavy, rollable and flammable objects)
- ☐ We have put our torches and slippers next to our beds.
- ☐ We have learned the places of electric, water and gas valves and how to turn off them.
- ☐ We have bought a fire extinguisher device for our home and learned how to use it. We have a smoke detector at home and we have been changing its batteries two times in a year.
- ☐ We have planned to take or repeat a first aid course.
- ☐ We have prepared our first aid kit.
- ☐ We have prepared our disaster kit.
  The places and the preparation date of disaster kit: .....
- ☐ We have defined the evacuation ways from the building and marked them on the sketch.
- ☐ We have finished "Hazard Hunt" at home.
- ☐ We have fastened the rollable furniture.
- ☐ We have defined the secude places of our house.
- ☐ We have decided how to meet again.
- ☐ We have learned not to use any matches or lighters that might cause a fire until it is certain that there is no gas leak after a disaster.
- ☐ We have learned that we should use our phones only for emergencies and radios and TVs to get information.
- ☐ We have completed this plan in ..... and we have decided to go over our plan in every six months

112 Emergency (Ambulance)
110 Fire brigade
155 Police
177 Forest Fire
156 Gendarmerie
184 Health Consultation
114 Poison Consultation
187 Natural Gas
158 Coast guard

Plan and get ready!

Fill in this Family Disaster Plan with your family.

Put one of its copies into your bag and the bags of each family member.
And also, hang one of the copies to a visible place at your home.

APPENDIX-5 An example of Hazard Profile Form

Hazard Profile Form No: ...
HAZARD: Earthquake/ (Personnel)
INFLUENCE SEVERITY: ☒ Disaster: It can affect more than 50% of people and/or surrounding or service/production 30 days or more. ☐ Critical: It can affect between 25% and 50% of people and/or surrounding or service/production at least 2 weeks. ☐ Limited: It can affect between 10% and 25% of people and or surrounding or service/production for 1 week or more. ☐ Unimportant: It can affect less than 10% of people and/or surrounding or service/production for 24 hours or shorter.
OCCURANCE FREQUENCY/ PROBABILITY : ☐ High: The probability to be seen is %100 or close to it. ☒ Sometimes: The probability to be seen is between 10-100% or at least one time in next 10 years. ☐ Seldom: The probability to be seen is between 1-10% or at least one time in next 100 years. ☐ Absent: (Hardly ever) The probability to be seen is less than 1% in next 100 years.
AREAS OR SURROUNDINGS AFFECTED MOSTLY: Storage porch, cylinder stocks, stocking tanks, pipe lines, offices, cupboards, shelves.(The whole of the facility)
TOTAL NUMBER OF PEOPLE THAT IT CAN AFFECT: All the personnel of facility
TIME AND PERIOD IN WHICH IT IS EFFECTIVE: Maximum 1 minute
APPROXIMATE OCCURENCE AND WARNING TIME: ☐ It occurs more than 24 hours and early warning can /cannot be done. ☐ It occurs between 12 and 24 hours and early warning can /cannot be done. ☐ It occurs between 6 and 12 and early warning can/cannot be done. ☐ It occurs shorter than 6 hours and early warning can/cannot be done. ☒ It occurs suddenly and early warning can/cannot be done.
AN EARLY WARNING SYSTEM OR METHOD -IF THERE IS:
APPROXIMATE TIME FOR EVACUATION: 1- 5 minute
YOUR PREPARATIONS AND/OR SUGGESTIONS FOR THIS DANGER: Earthquake button

APPENDIX-6 An example of Hazard Control List

Name of The Building:…… Room Number:…… Date:…../…../20……

Earthquake	Y	N	UN	NA
Is there any fire cabinet close?				
Has the fire cabinet been designed in such a way that it is opened easily and it does not be damaged during a tremor?				
Has it been prominently marked where first aid materials are such as a fire cabinet, fire extinguisher cylinder etc?				
Have emergency exits been prominently marked? (These signs should be seen during an emergency case (smoke and darkness)).				
Have unattached objects such as a cupboard, bookcase and shelves been rendered free of hazard with any structural support?				
Have some precautions been taken to prevent any injuries caused by falling of objects in a cupboard, bookcase and on shelves?				
Have heavy objects been kept away from high shelves?				
Have some precautions been taken to prevent any injuries caused by breaking of office windows during a probable shake or an explosion?				
Are aquariums and other potentially critical objects away from the places we sit?				
Are wall-mounted/hanging clocks, maps, fire extinguishers protected against any falling?				
Are flower pots in an ineffective position that can fall or break the windows during an earthquake?				
Are objects around doors in a position that will not affect entrances and exits by falling?				
Have paper and other easily inflammable materials stored close to electric and flame heaters been taken away?				
Does television monitor stay on a safe platform/cabinet without causing any danger?				
Have computers, monitors, printers and other valuable office materials been fastened in such a way that they will not fall during a shake?				
Do portable/movable cabinets carrying electronic equipments and computers have fixable wheels?				
Have the container carrying every kind of chemical materials been protected against any falling?				
Have hanging electric equipments (lamps, projectors etc.) been protected against falling during any tremor?				

Have some precautions been taken about ceiling floors, ventilation ducts and chimneys against any injuries caused by falling during a tremor?				
Have cylinders containing hazardous gas and inflammable materials been positioned not to fall during tremors?				
Have water and heater pipes been strengthened against tremors?				
Are compartments inside offices durable against tremors?				

Sign Boards	**Y**	**N**	**UK**	**NA**
Do pictograms contain bare and basic details?				
Are they suitable to surrounding they are used?				
Are they made of impact and weather resistant materials?				
Can they be seen easily and are they understandable?				
Are they suitable in height and position for visual level?				
Have they been put near dangerous places and next to dangerous objects and the entrance of general dangerous places?				
Have fluorescent colours, reflector materials or artificial lightings been used in places where natural lights are weak?				
Has the sign board been taken away after the circumstance shown in it has disappeared?				

Emergency Exits and Doors	**Y**	**N**	**UK**	**NA**
Are emergency exits and doors directly opened to outside or a safe area?				
Have objects that can prevent exit in front of emergency exit doors been taken away?				
Are number of emergency exits and doors, their sizes and places suitable to the size of the working place, qualifications of the works and the number of workers there?				
Are emergency exit doors opened to outside?				
Is rail or revolving doors used as emergency exits?				
Can emergency doors be easily and immediately opened by personnel during an emergency?				
Have emergency exits and doors been properly marked? (Sings should be put in suitable places and should be permanent)				
Are emergency exit doors locked or bonded?				
Are there any extra lighting system at emergency exits and doors that will enable adequate illumination during any electricity cut?				

Doors and Entrance?	**Y**	**N**	**UK**	**NA**
Are the places of doors and entrance, their numbers, sizes and materials they are made of suitable for the rooms, places and their intended use and also are they appropriate for the entrance and exit of the personnel?				
Have outer surface of transparent doors been prominently marked?				
Have opening at both sides doors been made of transparent materials or do they have transparent parts that make opposite sides to be seen?				
Have outer surfaces of transparent and semitransparent doors been protected against any break?				
Do rail doors have security system to prevent from going off trails and turn over?				
Do opening upwards doors have security system to prevent from falling down?				
Have doors on escape roads been properly marked? (These doors should be opened without getting help.)				
Do mechanical doors have noticeable and accessible emergency shutdown devices?				
Can mechanical doors be opened by hand in case of not being opened automatically during any power cut?				
Fixed ladder, Stairs, Stoop	**Y**	**N**	**UK**	**NA**
Are the stair surfaces not slippery and made from the proper material?	☐	☐	☐	☐
Are there anti skid bands on the stairs to prevent slipping?	☐	☐	☐	☐
Are the banisters' heights enough and safe?	☐	☐	☐	☐
Are the materials and obstacles that hinder passing put away?	☐	☐	☐	☐
Are the heights of stairs suitable? Do the stair elevations comply with standards?	☐	☐	☐	☐
Are the ladders and stoops lighted? Is there auxiliary energy in case of an emergency?	☐	☐	☐	☐
Are the manual buttons of lights in enough distance?	☐	☐	☐	☐
Fire Precautions	☐	☐	☐	☐
Is there enough firefighting equipment, fire detector and alarm system in the school?	☐	☐	☐	☐
Is the firefighting equipment easy to use?	☐	☐	☐	☐
Is there any obstacle in front of the firefighting equipment?	☐	☐	☐	☐
Is the firefighting equipment put in visible and accessible places?	☐	☐	☐	☐

Are the date of validity and periodic filling dates proper?	☐	☐	☐	☐
Are there fire instructions in accessible places?	☐	☐	☐	☐
Are there trained and responsible people about fire?	☐	☐	☐	☐
Are the inflammable materials under guard?	☐	☐	☐	☐
Are there unnecessary materials, paper/crap that can cause fire?	☐	☐	☐	☐
Is there an alarm system which is working and checked regularly?	☐	☐	☐	☐
Is the place of firefighting equipment marked properly and are the marks permanent in proper places?	☐	☐	☐	☐
First-aid Room and Equipments	**Y**	**N**	**UK**	**NA**
Is there a first-aid room?	☐	☐	☐	☐
Are the first aid rooms equipped with enough material and equipment?	☐	☐	☐	☐
Are these spaces signed in accordance with Security and Health Signs Regulation?	☐	☐	☐	☐
Are the first aid equipments put in places that working conditions require and are they signed appropriately?	☐	☐	☐	☐
Air- Conditioning of Closed Working Places	☐	☐	☐	☐
Is there enough clean weather that will be needed in accordance with working type, and thing employees do in the offices?	☐	☐	☐	☐
Is the proper working of system being provided when forcible air-conditioning system is being used?	☐	☐	☐	☐
Is there any warning system that reports breakdowns if the nonworking of air conditioning system is dangerous for employees' health?	☐	☐	☐	☐
Is airstream in artificial air-conditioning systems disturbing employees?	☐	☐	☐	☐
Are wastes and dirt that can give harm people' health messing up working place's weather, throwing out immediately?	☐	☐	☐	☐
Is there any disturbing smell in working surrounding?	☐	☐	☐	☐
Is the moisture of places suitable?	☐	☐	☐	☐
Ambient Temperature	☐	☐	☐	☐
Is the temperature of the working place suitable for the way of working and the effort workers spend?	☐	☐	☐	☐
Are the temperatures of resting area, changing rooms, showers and toilets, waiting spots, cafeterias and first aid rooms suitable for the intended use?	☐	☐	☐	☐
Are the windows and roof lighting suitable for preventing the adverse effect of sunlight according to the properties of the working place and the jobs?	☐	☐	☐	☐
Is the ambient temperature disturbing or not?	☐	☐	☐	☐

Ambient Lightning	☐	☐	☐	☐
Is working place being lightened with daylight in enough degree?	☐	☐	☐	☐
Is suitable and enough lightning with artificial light being provided in the places which cannot take daylight?	☐	☐	☐	☐
Is suitable and enough lightning with artificial light being provided in night studies?	☐	☐	☐	☐
Air lightning systems in working places and transit roads been put properly and in a way that it will not create risk for employees?	☐	☐	☐	☐
Are there alternative lightning systems that will provide urgent and enough lightning in places where any failure in lightning system cause risk for employees?	☐	☐	☐	☐
Are lightning lamps working and clean?	☐	☐	☐	☐
Are lightning systems (ballasts) working noisily?	☐	☐	☐	☐
Are lightning lamps blinking while it is turned on?	☐	☐	☐	☐
Working with display monitors	☐	☐	☐	☐
Is employer given necessary education before starting to work and when there is an important change in work conditions and are these trainings being repeated periodically?	☐	☐	☐	☐
Are employees having eye treatment before they start to work with display monitors and when they have sight problem?	☐	☐	☐	☐
Are employees being tested with ophthalmologic tests according to treatment results if necessary?	☐	☐	☐	☐
Is the screen image stabile? (image must not be shaken)	☐	☐	☐	☐
Can the contrast between brightness, characters and background be adjusted easily by the operator?	☐	☐	☐	☐
Is the monitor in a way it can be adjusted comfortably according to operator's needs?	☐	☐	☐	☐
Is it possible for monitor to be used on a separate basis or a table that can be adjusted?	☐	☐	☐	☐
Are there reflections or flashings that can annoy the user?	☐	☐	☐	☐
Is the working table or working surface in a way it will enable regulation comfortably of monitor, keyboard, documents and other related materials , in enough bigness and in quality its surface will not reflect the light?	☐	☐	☐	☐
Is the chair balanced and in a way operator can sit comfortably and move easily?	☐	☐	☐	☐
Can the height of sitting place be adjusted?	☐	☐	☐	☐
Can backrest place be adjusted to front-back and up-down and is back support flexible and suitable for back?	☐	☐	☐	☐
Is foot support provided when demanded?	☐	☐	☐	☐
Auxiliary Organizations	☐	☐	☐	☐
Are there proper changing rooms in the establishment in which workers can change their clothes?	☐	☐	☐	☐
Are there enough cloth cabinets in changing rooms?	☐	☐	☐	☐
Is there a washbasin in LPG filling facilities for hand and face hygiene?	☐	☐	☐	☐

Are there sufficient WC and shower cabins in the establishments?	☐	☐	☐	☐
Do all the doors open towards outside in the LPG filling facilities?	☐	☐	☐	☐
Do all the windows in the LPG filling facilities are made proper for exit when necessary?	☐	☐	☐	☐
Do iron fences and trellises removed from the windows?	☐	☐	☐	☐
Is full first aid dressing stocked in the LPG filling facilities?	☐	☐	☐	☐
Personal Protectors	☐	☐	☐	☐
Are the workers given proper clothes according to their jobs?	☐	☐	☐	☐
Do the personnel who work in storage place, pumping unit, bulking and filling place, cylinder filling place, cylinder storing place and other activities use safety shoes which prevent sparks from occurring?	☐	☐	☐	☐
Since LPG can cause severe cold burns are the workers careful about not touching them and using protective gloves?	☐	☐	☐	☐
Were the personnel working in LPG filling facilities trained about the properties of LPG and its probable hazards?	☐	☐	☐	☐
Are the training certificates of the workers being kept in the working place?	☐	☐	☐	☐
Are the workers who work in noisy jobs examined periodically?	☐	☐	☐	☐
Were the workers given suitable protective devices such as helmet, ear protectors and earplugs?	☐	☐	☐	☐
Other Matters	☐	☐	☐	☐
Are employment health reports that are belonging to employees, heavy and dangerous works being taken? Are periodic treatment results written to this report?	☐	☐	☐	☐
Are there certificate examples of identity cards in personal files of employees?	☐	☐	☐	☐
Is there a doctor or more than one doctor in working places where at least 50 employees work permanently?	☐	☐	☐	☐
Are yearly working reports being prepared in a way they will include all works clearly in working place health units?	☐	☐	☐	☐
Are there cool drinking water that employees in the working place can use easily?	☐	☐	☐	☐
Are maximum number of workers who can be in the building or department, material amount, and what is the work that is permitted in the building written separate boards on the door where work is done?	☐	☐	☐	☐
Are check and experiments of steam and hot water boilers being done?	☐	☐	☐	☐
Are check and experiments of compressors about security being done?	☐	☐	☐	☐
Is stabile compressor storage in a part that durable against explosions?	☐	☐	☐	☐
Is employee health work security assembly organized in working place that employ more than 50 employees (including 50) ?	☐	☐	☐	☐
Is a job security expert working in a working placed that employ more than 50 employees (including 50)?	☐	☐	☐	☐

Y: Yes N: No **UK: Unknown** **NA: Not applicable**

This form is filled by _____

APPENDIX-7 An example of Hazard Control List for Open Areas

Name of The Building:..... Room Number:..... Date:...../...../20.....

Auxiliary Organizations	Y	N	UK	NA
Are there proper changing rooms in the establishment in which workers can change their clothes?	☐	☐	☐	☐
Are there enough cloth cabinets in changing rooms?	☐	☐	☐	☐
Is there a washbasin in LPG filling facilities for hand and face hygiene?	☐	☐	☐	☐
Are there sufficient WC and shower cabinets in the establishments?	☐	☐	☐	☐
Are all the doors being opened towards outside in the LPG filling facilities?	☐	☐	☐	☐
Are all the windows in the LPG filling facilities made proper for exit when necessary?	☐	☐	☐	☐
Are iron fences and trellises removed from the windows?	☐	☐	☐	☐
Are full first aid materials stocked in the LPG filling facilities?	☐	☐	☐	☐
Workers	☐	☐	☐	☐
Are the workers' medical reports concerning their start in heavy and hazardous jobs being received? Are the results of periodical physical examinations of the workers entered in this report?	☐	☐	☐	☐
Are there certified copies of workers' identification cards kept in their personal files?	☐	☐	☐	☐
Are the workers given proper clothes according to their jobs?	☐	☐	☐	☐
Do the personnel who work in storage place, pumping unit, bulking and filling place, cylinder filling place, cylinder storing place and other activities use safety shoes which prevent sparks from occurring?	☐	☐	☐	☐
Since LPG can cause severe cold burns are the workers careful about not touching them and using protective gloves?	☐	☐	☐	☐
Were the personnel working in LPG filling facilities trained about the properties of LPG and its probable hazards?	☐	☐	☐	☐
Are the training certificates of the workers being kept in the working place?	☐	☐	☐	☐
Are the workers who work in noisy jobs examined periodically?	☐	☐	☐	☐
Were the workers given suitable protective devices such as helmet, ear protectors and earplugs?	☐	☐	☐	☐

Other Matters	☐	☐	☐	☐
Is there a doctor or more than one doctor in working places where at least 50 employees work permanently?	☐	☐	☐	☐
Are yearly working reports being prepared in a way they will include all works clearly in working place health units?	☐	☐	☐	☐
Are there cool drinking water kept that employees in the working place can use easily?	☐	☐	☐	☐
Are maximum number of workers who can be in the building or part, material amount, and what is the work that is permitted to building's construction written separately to the door where work is done in slabs way?	☐	☐	☐	☐
Are check and experiments of steam and hot water boilers being done?	☐	☐	☐	☐
Are check and experiments of compressors about security being done?	☐	☐	☐	☐
Is stabile compressor storage in a part that durable against explosions?	☐	☐	☐	☐
Is employee health work security assembly organized in working place that employ more than 50 employees (including 50) ?	☐	☐	☐	☐

Y: Yes N: No UK: Unknown NA: Not applicable

This form is filled by _____

APPENDIX-8 An example of Hazard Control List for Production and Storage Areas

Name of The Building:..... Room Number:..... Date:...../...../20.....

Tanks	**Y**	**N**	**UK**	**NA**
Are the tanks not placed on each other?	☐	☐	☐	☐
Are the necessary precautions taken in the place where tanks are located in order to prevent liquids' gathering or flowing whose flash points are under 900°C?	☐	☐	☐	☐
Are the other tanks which contain inflammable and combustible materials located in different fields separated with banks in the area where LPG tanks are located?	☐	☐	☐	☐
Is the horizontal distance at least 6 meters between aboveground LPG tanks and the tanks which contain liquids which have lower flash points?	☐	☐	☐	☐
Are the tanks anchored strongly?	☐	☐	☐	☐
Are the tanks marked according to TS 151 in order to indicate the type of gas they contain?	☐	☐	☐	☐
Are the distance of vessels, which are used to store liquid and LPG, provided proper to opinion of Employment Committee of Inspection Presidency and number 5 Chart attached to Regulation from residential areas and from each other? (Inflammable Combustible Article 130)	☐	☐	☐	☐
Is the minimum range between LPG tank and oxygen or gaseous hydrogen tanks is proper to the (TS 1446/2.1.1.3) chart?	☐	☐	☐	☐
Are the tanks located on firm ground and fastened tightly?	☐	☐	☐	☐
Is flexibility provided in connection pipe fittings?	☐	☐	☐	☐
Were the necessary precautions taken for any physical effects of probable crash of motor vehicles to tanks, tank system or any part of it?	☐	☐	☐	☐
Are there labels or plates which contain relevant information on the tanks?	☐	☐	☐	☐
Is the underground tank buried at least 60 cm under the ground level after the top level of the tank?	☐	☐	☐	☐
Are the cathodic protections of underground tanks being made?	☐	☐	☐	☐
Were the storage containers in the LPG filling facility in the cylinder, globe and partially cylinder and partially half cone shape, with external cooling system, placed on firm ground, equipped with container particulars, put into necessary experiments and painted with a color that reflects light?	☐	☐	☐	☐
Were the tanks which have 1000 m^3 or more water capacity inserted with an acoustic and light high level alarm?	☐	☐	☐	☐
Was the safety valve of storage tanks which have 120 m^3 or more water capacity multiple or more than one?	☐	☐	☐	☐
Can all the electrical energy except lightning and fire pump drive unit be cut with button and keys located in proper places in the LPG facilities in case of emergency?	☐	☐	☐	☐
Are the buttons, keys, switches and other similar appliances at least 3 meters away from the part of the establishment where there are always people? Are these at least 8.5 meters away from the pumps and tanks?	☐	☐	☐	☐

Are the safety valves located at the top of the tank and in the way they come on vapor phase of LPG in the tank? Are their outlets open to atmosphere directly?	☐	☐	☐	☐
Is a protective cap put on the outlet of the safety valve against rain, dust and other foreign substances?	☐	☐	☐	☐
Is there a manometer and level indicator on the LPG storage tanks?	☐	☐	☐	☐
Are the necessary precautions taken in order to protect tank from flames in case gases leaked from drainage hole are burned?	☐	☐	☐	☐
Is closing valve installed between safety valves and tank or among discharging pipe fittings?	☐	☐	☐	☐
Is the over current valve, which is installed on the vehicles, placed before the closing valve?	☐	☐	☐	☐
Are the filling outlet of the tanks and closing valves placed as near as possible to the tank?	☐	☐	☐	☐
Are the valves maximum 180 cm height above the ground level?	☐	☐	☐	☐
Are there fixed ladders and platforms in order to provide easy access to the check installations located on aboveground tanks?	☐	☐	☐	☐
Are the valves, regulators, manometers and other devices protected against physical damages?	☐	☐	☐	☐
Are the valves located in a proper place where maintenance, repairing and operations can be done easily?	☐	☐	☐	☐
Is a closing valve located between the manometer and tank? (Closing valve should be single action (like a globe valve) and fire resistant.)	☐	☐	☐	☐
Is there a manual valve and check valve on the tank filling line?	☐	☐	☐	☐
Is the LPG storing facilities examined after pipe fittings, installations and all the connections are completed?	☐	☐	☐	☐
Are the checks and experiments of pressured vessels made in the following periods: After it is manufactured and before it is installed and used; After changes are done and repairs are made; In case they are not used at least for 3 months and taken into service, before they are used again; In every case once in a year?	☐	☐	☐	☐
Are all the metallic partitions, parts of roof, machines and appliances grounded in the proper way?	☐	☐	☐	☐
Are all the storages in which flammable liquids are put, pipe fittings and pipe connections grounded against static electricity?	☐	☐	☐	☐
Is the ground line connection between the vehicle and the storage made during the storages are filled with flammable liquids or emptied?	☐	☐	☐	☐
Are the tankers which move on rubber wheels cleaned from static electricity before they are put into filling places?	☐	☐	☐	☐

CYLINDERS	Y	N	UK	NA
Is the "name of the manufacturing company" written on the compressed gas cylinder indelibly and in an uncarved form?				
Is the "serial number" written on the compressed gas cylinder indelibly and in an uncarved form?	☐	☐	☐	☐
Is the "empty and full weight and volume" written on the compressed gas cylinder indelibly and in an uncarved form?	☐	☐	☐	☐
Is "maximum charge pressure" written on the compressed gas cylinder indelibly and in an uncarved form?	☐	☐	☐	☐
Is the "production date" written on the compressed gas cylinder indelibly and in an uncarved form?	☐	☐	☐	☐
Are the experiments of hydraulic pressure, weight, volume etc made and certified?	☐	☐	☐	☐
Storing Cylinders	**Y**	**N**	**UK**	**NA**
Are the filled cylinders protected against change of temperatures, vertical rays of the sun, radiant heat, cold and moisture?	☐	☐	☐	☐
Are as few as possible cylinders being kept together when the filled cylinders are stored?	☐	☐	☐	☐
Are the cylinders kept in fire resistant buildings or partitions and away from radiators and other heat sources?	☐	☐	☐	☐
Are precautions taken against the cylinders' falling or rolling?	☐	☐	☐	☐
Are the cylinders classified and stored according to the characteristics of gas contained in them?	☐	☐	☐	☐
Are the empty cylinders collected in a different place?	☐	☐	☐	☐
Is there proper air breather in the place where cylinders are stored?	☐	☐	☐	☐
Are there efficient doors of the place where cylinders are stored?	☐	☐	☐	☐
Is fire and inflammable material usage prohibited in the place where cylinders are stored?	☐	☐	☐	☐
Transportation of Cylinders	**E**	**H**	**B**	**UD**
Is the valve of the vessels closed? Is the cover put its place?	☐	☐	☐	☐
Are the vessels stocked in the way their outlets come upwards?	☐	☐	☐	☐
Are there efficient and specially trained officers during transportation?	☐	☐	☐	☐
Are necessary precautions taken against static electricity during the movement of vehicles?	☐	☐	☐	☐
Is the exhaust safety provided in the vehicles?	☐	☐	☐	☐
Is fire and inflammable material usage prohibited for searching gas leakage?	☐	☐	☐	☐
Other	☐	☐	☐	☐
Are the cylinders located in the way they cannot be damaged physically and cannot be exposed to excessive temperature increase and human and/or vehicle traffic?	☐	☐	☐	☐
Are the cylinders stored in the building at efficient distance to exit doors and stairways?	☐	☐	☐	☐
Are the empty and filled LPG cylinders are stored out of the building when possible?	☐	☐	☐	☐

Are the cylinders stocked in closed places in single files?	☐	☐	☐	☐
Are the cylinders stocked as maximum 6 lines on ends and under shelter with proper fitting in order to prevent sun ray exposure?	☐	☐	☐	☐
Are the necessary precautions taken in order to protect cylinder valves during transportation and filling in the storage process?	☐	☐	☐	☐
Is it possible to stop LPG flow with hydraulic safety valves placed on LPG distribution piping lines, storage place, pumping unit, cylinder filling facility and bulk filling place in emergencies with a remote control from at least 5 meters distance as hydraulic or pneumatic?	☐	☐	☐	☐
Are the pumps and compressors used in LPG filling operations chosen in a structure which cannot be damaged by liquid or gas LPG?	☐	☐	☐	☐
Are certificates, which indicate that those devices are as they should be, taken from manufacturers and merchandisers before flame resistant devices are used?	☐	☐	☐	☐
Are welded works, drilling operations and working with electrical devices which are not explosion-resistant prohibited in an area of 15 meters width from storage places in LPG facilities, pumping unit, bulk filling place, cylinder filling facility cylinder stocking place and auxiliary activities?	☐	☐	☐	☐
Storing in bulk	**E**	**H**	**B**	**UD**
Is the filling or emptying LPG in bulk observed by at least one person during the process?	☐	☐	☐	☐
Is the place where bulk transport vehicles emptied flat?	☐	☐	☐	☐
Are chocks put in the wheels of bulk transport vehicles from both sides?	☐	☐	☐	☐
Is the activity of filling and emptying bulk transport vehicles and tanks proper to TS 1445 and TS 1446?	☐	☐	☐	☐
Are storage tanks and vehicles grounded properly?	☐	☐	☐	☐
Are checks done for leakage and dropping?	☐	☐	☐	☐
Is soap bubble or gas detector used during checks?	☐	☐	☐	☐
Is transfer hose or arm in proper structure for usage and protected against physical damages?	☐	☐	☐	☐
Is there a valve with hydraulic actuator with at least one cut-off valve whose caliber is more than 18mm on each line which will be used for filling and emptying of bulk vehicles?	☐	☐	☐	☐
Is there a one-way valve (check valve) or cut-off valve with hydraulic or pneumatic actuator or over current valve?	☐	☐	☐	☐
Is the lighting installation appropriate?	☐	☐	☐	☐
Is a flame holder fastened at the end of exhaust pipe of vehicles which carry bulk LPG before they enter the facility?	☐	☐	☐	☐
Are the LPG filling stations constituted appropriate to the projects? Are installation project, electricity project and a certified copy of layout plan kept in the working place?	☐	☐	☐	☐
Is the passing of bare energy (electric) power transmission line prevented inside the border of danger zone in the LPG filling facilities?	☐	☐	☐	☐
Are LPG filling stations protected against lightning?	☐	☐	☐	☐

Is there an instruction for vehicle filling in the cylinder filling field? Is it published in a visible way?	☐	☐	☐	☐
Is there a fire and emergency plan in the waiting spot of the workers? Is it published in a visible way?	☐	☐	☐	☐
Is there canal, culvert or other similar hollows in which there can be gas accumulation in the tank field or in 5 meters distance from the filling unit?	☐	☐	☐	☐
Are all the electric installations (power, lighting-grounding) checked once a year by authorized electricians and is a document like a technical report showing the results of the checks kept in a file at the working place by being prepared and approved?	☐	☐	☐	☐
Is there an alarm system that is with ex-proof gas detector and above from 20 cm ground in the filling facility and tank field?	☐	☐	☐	☐
Does the alarm system cut off all the electricity of the facility except fire extinguishing system and lighting system in case of gas leakage?	☐	☐	☐	☐
Is there an autorefrigeration system ('spring' shower) above the overground storage tank?	☐	☐	☐	☐
Is the autorefrigeration system ('spring' shower) equipped with such elements as a pressure sensor and a solenoid valve?	☐	☐	☐	☐
Is the writing of 'LPG-hazardous chemical' written on the LPG storage tank in suitable form and size?	☐	☐	☐	☐
Are natural gas pipelines that are suitable to TS 346 and TS 416 used in underground and aboveground pipelines?	☐	☐	☐	☐
Are aboveground pipelines supported with suitable distance and adequate stability?	☐	☐	☐	☐
Are underground and aboveground pipelines and all the metal components protected against physical influences?	☐	☐	☐	☐
Are pipes that are furnished in underground, fixed at least 50 cm depth and properly?	☐	☐	☐	☐
Are pipes that are furnished in underground, isolated against corrosion with polyethylene bands?	☐	☐	☐	☐
Are such things as welding, cold bending without any narrowing in size or offsets with fit welding used in the connection technique?	☐	☐	☐	☐
Are all the groundings on pipes, valves, pumps, engines, tanks and such like installations done completely?	☐	☐	☐	☐
Are tanks and pipe lines in LPG filling facility checked after any montage and before being taken in service and also are the checks and tests of the facility periodically done once a year by authorized technical staff and is a technical report showing the results of the checks kept in the working place?	☐	☐	☐	☐
Is the technique of welding used in all the places where it is possible to apply pipe connections and jointings?	☐	☐	☐	☐

Filling into cylinders	**E**	**H**	**B**	**UD**
Are the cylinders that are suitable to TS 55 and TS 5306 done filling?	☐	☐	☐	☐
Is it prohibited to do filling of the cylinders that do not have their own registered trademark or color or short name and painted in a color other than its company?	☐	☐	☐	☐
Are the cylinders that are belonged to the contracted distribution company in the filling facilities?	☐	☐	☐	☐
Are natural and forced ventilation present in the filling places of the cylinders?	☐	☐	☐	☐
Have shafts, discharge lines for LPG been prevented to be directed to canalization and other purpose discharge lines?	☐	☐	☐	☐
Are LPG pipes passing through concrete and brick walls protected with a cover in a way that they move freely in it?	☐	☐	☐	☐
Is a lighting system with the qualities natural and arc leak resistant 'explosion resistant' done in pumping units, bulk filling place, stocking site of cylinders and cylinder filling place and activity sites and in areas that is in this area till 8.5 m to this boundary?	☐	☐	☐	☐
Are the cylinders checked according to TS 55 and TS 5306 before being taken for filling?	☐	☐	☐	☐
Is it prohibited to make a filling from a cylinder into another cylinder?	☐	☐	☐	☐
Is leak check done from distribution pipes and filling heading?	☐	☐	☐	☐
Are cylinder and their valves or muffs had the leak resistant test with special leak check devices and in water basins or soap bubbles?	☐	☐	☐	☐
Are the cylinders that have leakage, transferred into storage tank with LPG fit devices by being gotten under check?	☐	☐	☐	☐
Are the cylinders, their valves or muffs that are out of order, assessed according to TS 5306?	☐	☐	☐	☐
Fire	**E**	**H**	**B**	**UD**
Is the required training about fire, usage of fire extinguishing devices and emergency plans given to the workers working in LPG filling facilities?	☐	☐	☐	☐
Is a fire security team organized?	☐	☐	☐	☐
Are the documents related to fire kept in the working place? (Education, check etc.)	☐	☐	☐	☐
Is a fire hydration system present in the working place that works with water and suitable to local fire brigade norms?	☐	☐	☐	☐
Are there storage tanks or basins that can enable adequate water in case of not enabling pressure water from the main network?	☐	☐	☐	☐
Are the elements related to the system of fire extinguishing with water as motor-pumps and hoses checked periodically?	☐	☐	☐	☐
Is fire extinguishing devices working with water arranged in coordinate boxes and cupboards at certain places in a way that it is possible to use them easily?	☐	☐	☐	☐
Are motor-pumps that enable pressure water put to service experience at least one time and 5 minutes in a day in case of using them?	☐	☐	☐	☐

Is there a fire alarm installation in LPG filling facilities?	☐	☐	☐	☐
Is the alarm system supplied with another resource other than lighting and power line?	☐	☐	☐	☐
Are fire extinguisher devices periodically, once in a six month, checked?	☐	☐	☐	☐
Are there adequate fire resistant cloths (fire resistant blankets)?	☐	☐	☐	☐
Are warning plates indicating fire danger located in visible areas?	☐	☐	☐	☐
Is the usage of heating system emitting sparks and flames prohibited in the places that are within dangerous areas?	☐	☐	☐	☐
Are bare flame and materials which can cause sparks and cigarette used in LPG storage tank site and filling areas?	☐	☐	☐	☐
Are minor fires treated by fire extinguisher devices with dry chemical powder?	☐	☐	☐	☐
Is gas leakage that has started to burn, stopped?	☐	☐	☐	☐
Is water used to cool tanks that are exposed to heat against the probability of explosion as a result of dilating of boiling liquid during any fire?	☐	☐	☐	☐
Is water mist used in order to save the personnel who is going to turn off the tank systems?	☐	☐	☐	☐
	☐	☐	☐	☐

Y: Yes N: No UK: Unknown NA: Not applicable

This form is filled by _____

APPENDIX-9 An example of Mitigation Form

The Name of the Establishment: The Place of the Establishment:

MITIGATION FORM		
HAZARD	**MITIGATION WORK**	**URGENCY (1-4)***
Emergency exit roads are not signed clearly.	Emergency exit roads will be signed within a certain standard.	4
Tubes that are not stabile are not safe with any structural support.	It will be suitable for tubes that are not stable to be taken into check with chock and supports.	4
Cabinet, bookcase and shelves that are not stabile can cause danger.	Cabinet, bookcase and shelves that are not stable must be fastened to shelves.	3
There are not precautions for preventing injuries of people as a result of closet, bookcase, and things on the shelves falling in shock.	Ribbon belt will be fastened to places which can create danger.	3
Heavy things are not taken away from high shelves.	Heavy things will be put down to lower shelves.	4
Facilities' windows can damage people by exploding during shocks.	Windows will be covered with films.	3
Passing stairs are not supported with structural support.	Stairs will be fastened to the floor and double edged banisters will be installed.	4
Wall mounted/hung watches, pictures, maps; fire extinguishers are not protected against falling.	They will be stabilized against falling.	4
No precautions taken for preventing the thinner and paint barrels fall from thinner shelter.	Fastening will be done.	4
Objects around the door can fall and they can hinder entrance and exits.	Fastening will be done.	3
TV, computer monitor, writers, other important Office materials are not fastened in a way that they will not create danger on a safe platform/cabin.	Fastening will be done.	3
Portative/active cabins, tables, etageres, that carry electronic equipments and computers, don't have fixable wheels.	Fastening wheels will be assembled.	3
There is no earthquake censor in the facility.	Earthquake censor will be bought.	2

Check systems, cabinets and communication devices are not taken under control in crisis management counter.	Fastenings will be done.	3
There are no precautions against falling down of diesel generator and diesel pump fire pomp, fuel tank and barrels.	By taking out the fuel tank, it will be fastened.	2
Containers in which there are environmentally hazardous wastes are not kept under control against earthquake.	For facility of dangerous wastes and materials that can damage surrounding, special containers will be provided.	3
Personnel and subcontractors in the establishment are not informed about earthquake security precautions, their materials are not taken under control against earthquake.	Information will be given and materials will be protected against earthquake.	2
There is not necessary recovery equipment in the facilities.	Necessary equipment will be bought.	2
Trash stations are not done in a way they will not cause danger.	Trash stations, that are appropriate for standards, will be done.	2
Zones with 1. Degree risk is not signed.	Risky zones will be signed.	4
Visitors of the establishment are not informed with handouts.	Handouts will be prepared and published.	2
There are no local gas detectors in places such as cafeteria, tea shop, combi boiler room.	Gas detector will be put.	4
There are no suitable containers and facility places for recycling wastes.	Suitable containers will be provided.	2
Stock tanks, exit stairs and platforms on the tank are not proper for safety.	Stairs and platforms should be made proper to standards.	4
Portative extinguishers are not safe against falling during shocks.	Portative fire extinguishers will be fastened with chains.	3
There is not an area where wastes, that are thought as dangerous. It is not appropriate to facility legislation; wastes are not eliminated appropriately.	Wastes will be eliminated appropriately defining an area that is appropriate for standards.	2

There is not an active electronic lightning rod.	Buying an active, lightning rod and it will be changed with the old one.	2
Food samples are not kept in a special container for one day.	By taking a sample container they will be kept in -5 degree in the fridge for one day.	2
Athermit roof and walls are not changed in the establishment.	Athermit roof and walls will be changed in the establishment.	4

*4: Very urgent 3: Urgent 2: Necessary to do 1: Better to do

This form has been filled by .....

APPENDIX-10 An example for Mitigation Action Plan

UNIT/FACILITY : _____
DEPARTMENT/FLOOR : _____
MITIGATION PLAN

Definition of the works done for mitigation*:	Budget (TL)	Planned Date of Beginning:	Planned Date of Ending:	Approval :
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
		__ / __ / 20__	__ / __ / 20__	☐
TOTAL BUDGET:		APPROVED BUDGET:		

*The works which are planned to be done are listed according to the date of beginning.

The person who filled the form: _____ Date: ___ / ___ / 20__

The person who approved this: _____ Date: ___ / ___ / 20___

Signature: _____

APPENDIX-11 Examples of Possible Standard Operations, Check Lists, Work Directions and Information Cards

Serial no	Direction/Instruction Name	Available	Not available
STANDARD OPERATIONAL PROCEDURES			
1	Procedure which will be applied in gas leakage	✓	
2	Procedure which will be applied in explosions and fire		✓
3	Procedure which will be applied in natural event and adverse weather conditions (Lightning, flood, storm, snowstorm)		
4	Procedure which will be applied during an earthquake		
5	Procedure which will be applied in case of terror and sabotage (Bomb warning, suspicious package/tube, attack)		
6	Procedure which will be applied in icing/frost		
7	Procedure to which HAZMAT will be applied		
8	Procedure which will be applied in emergency health-food poisoning		
9	Procedure which will be applied to environmental risks stemmed from the facility		
10	Procedure which will be applied in occupational accident cases		
SOP CHECK LISTS			
11	Gas leakage check list		
12	Fire and explosion check list		
13	Natural event and adverse weather conditions check list (Lightning, flood, storm, land slide, snowstorm)		
14	Earthquake check list		
15	Terror and sabotage check list (Bomb warning, suspicious package/tube, attack)		
16	Icing/frost check list		
17	HAZMAT check list		
18	Emergency health-food poisoning check list		
19	Environmental risks stemmed from the facility check list		
20	Occupational accident check list		
WORK INSTRUCTIONS			
21	Direction for paint preparation activity		
22	Direction for gas leakage control in the pool		
23	Diesel generator emergency plan		
24	Direction for spraying booth operation and maintenance		
25	Purification facility emergency plan		
26	Direction for diesel fire pump operation and maintenance		
27	Direction for electric driven fire pump operation and maintenance		
28	Direction for fire hydrant operation and maintenance		
29	Fire direction		

30	Fire warning and first response direction		
31	Direction for fire drills' application		
32	Direction for usage, maintenance and control of fire extinguishers		
33	Direction of tasks in fire fighting		
34	Direction of fire teams' tasks		
35	Direction for repair with fire		
36	Direction for door security personnel		
37	Direction for filling and emptying cylinder		
38	Direction for industrial water based KD 50 metal slider usage		
INFORMATION CARDS			
39	LPG		
40	LNG		
41	Paints		
42	Thinner		
43	DERFLOC 2020 paint killer		
44	DERCOMPLEKS		
45	Dk. 50 Metal slider		
46	Polyelectrolyte		
47	AlSO4		
48	Lime		
49	Foam		
50	KKT		
51	CO2		
52	N2		
53	First aid material list		
54	List of emergency material and equipment		
55	Fire extinguisher list		
56	Fire material list		
...	...		

BOMB NOTIFICATION PHONE REPORT

Aim: In order to have information about probable sabotage and bomb notification and make an evaluation this form should be filled and one copy of it should be sent to police, security and gendarme units when it is necessary.

THE GENDER	AGE	ACCENT OF THE CALLER

VOICE OF THE CALLER

☐ calm	☐ nasally
☐ angry	☐ stutterer
☐ excited	☐ lispily
☐ husky	☐ rude
☐ fast	☐ deep
☐ soft	☐ rough
☐ high	☐ houghing
☐ laughing	☐ taking deep breathes
☐ crying	☐ jar
☐ normal	☐ changing
☐ clear	☐ foreigner
☐ familiar	☐ swallowing the words

If the voice is familiar whose voice can it be? .....

BACKGROUND VOICES

__street (car, bus)	__animal voice
__plane	__clear
__voices	__silent
__music	__local call
__house (plate, TV voices)	__distant call
__motor (fan, air conditioner)	__phone box
__office machines	__factory machines
__other.....	

THE PERSON WHO RECEIVED THE NOTIFICATION:
NAME: .....
POSITION: .....
PHONE NUMBER: .....
DATE: .....

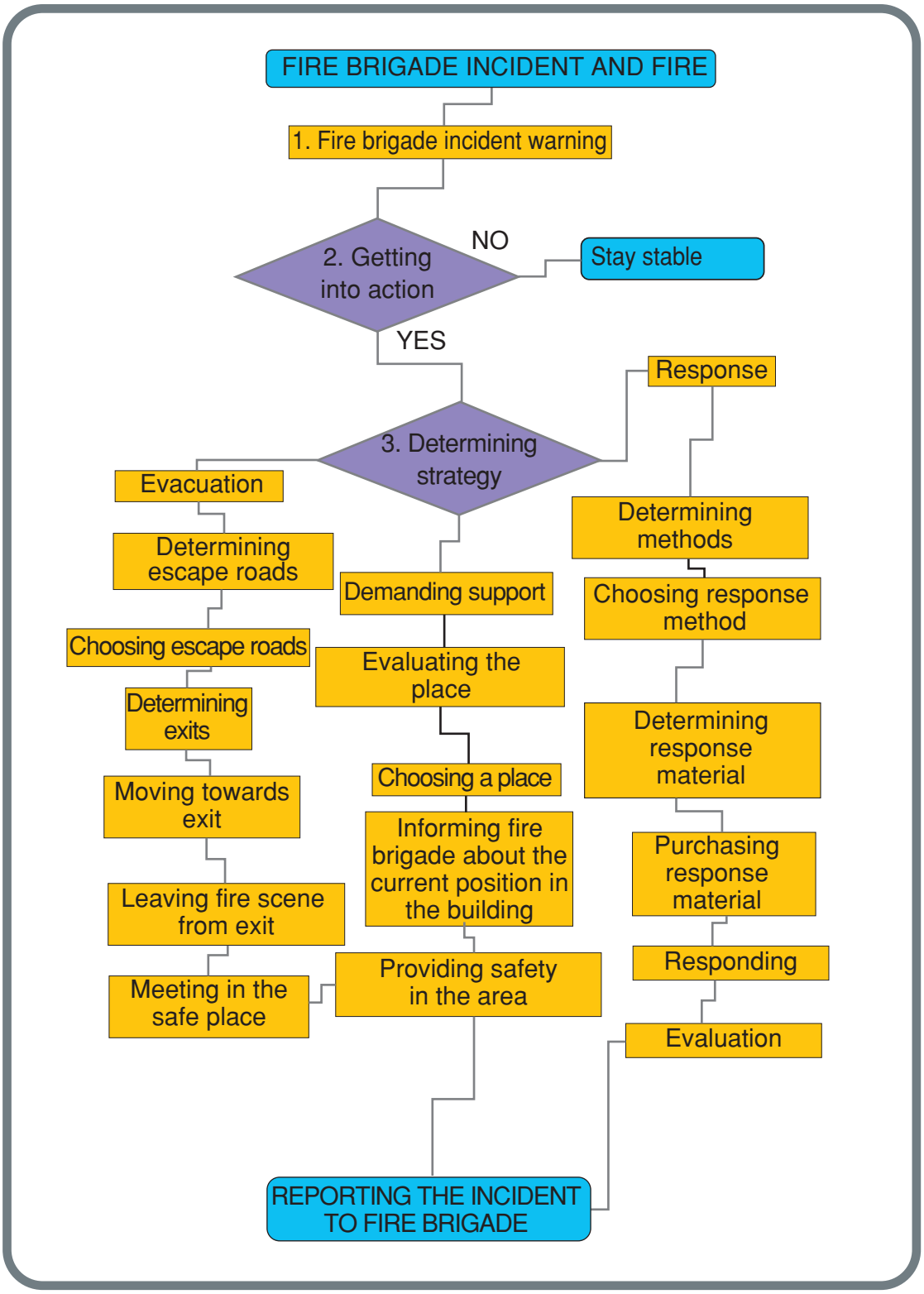
QUESTIONS TO ASK

1. When will the bomb explode?
.....
2. Where is the bomb right now?
.....
3. What does the bomb look like?
....
4. What kind of a bomb is it?
.....
5. What causes the bomb's explosion?
.....
6. Did you place the bomb?
.....
7. Why did you place a bomb?
....
8. Where are you?
.....
9. What is your name?
.....

WHAT IS SAID EXACTLY?
.....
.....
.....
.....
.....

THE PEOPLE WHO ARE GOING TO BE CALLED IN EMERGENCY (THE PEOPLE MENTIONED IN THE PHONE)

APPENDIX-13 An example for Flow Chart of Necessary Instructions which should be applied in Fire Brigade Incident



APPENDIX-14 An example of Accident Evaluation Form

ACCIDENT EVALUATION FORM

After all types of occupational accidents, disasters or sabotages occurred manager of the establishment make an accident evaluation in order to determine the reasons of the accident and what kind of precautions should be taken to prevent this happen again.

Accident scene:.....

☐ Inside the establishment ☐ Outside the establishment

Accident report no:	**Date of report:** ...../...../.....	**Time:**.....

Type of the disaster or accident : .....

Incident scene and its address : .....

Beginning time and date of the incident:..... Ending time and date:.....

Description of the incident and damage details : .....

.....

.....

Reasons of the incident: .....

.....

Necessary precaution to be taken to prevent the same incident occur again :

.....

.....

.....

Started CPA:.....

Labor loss:.....

Is the sufferer insured? ☐ Yes ☐ No

Does the insurance assess the extent of damage? ☐ Yes ☐ No

Are the people who caused the incident trained? ☐ Yes ☐ No

Is there intention in the incident? ☐ Yes ☐ No

Human loss: Dead:... Slightly wounded: .....

Seriously wounded: .....

Name and surnames of the accident victims:.....

.....

Damage after the incident:.....

.....

Is media involved in the incident? ☐ Yes ☐ No

Is police or gendarmerie informed? ☐ Yes ☐ No

Is fire system or fire equipment used in the incident? ☐ Yes ☐ No

Did you respond to the incident and did you make any mistakes?

Explain:.....

THE REPORT PREPARED BY:

Name and Surname: ..... Signature: .....

APPROVAL: Manager of the Establishment:.. ..... Signature:

.....

APPENDIX-15 An example for Information Cards

NAME OF THE MATERIAL		SULPHURIC ACID	
CHEMICAL FORMULA		H_2SO_4	
CHEMICAL AND PHYSICAL PROPERTIES	**MOLECULAR WEIGHT**	98 gr./ mol	
	DENSITY	1.84 gr./cm^2	
	APPEARANCE	colourless, bright, liquid	
	H_2S_4 (W/W) MAX.	98,5 %	
SPECIFICATIONS:			
	APPROPRIATE TO TSE 692	TECHNIQUE	PURE ACID
Ash	%: Max. 0,15"	Max. 0,02	Max. 0,002
H2SO4	%: Min.60	Min. 92,5	Min. 98,5
Fe	%: Max 0,035	Max. 0,005	Max. 0,002
As	%: Max. 0,04	Max. 0,001	Max. 0,00005
Pb	%: Max. 0,05	Max. 0,002	Max. 0,002
Nitric oxides	%: Max. 0,001	Max. 0,001	Max. 0,0002
SO2	%: -	Max. 0,02	Max. 0,001
Cl	%: -	Max. 0,001	Max. 0,0005

PROBABLE HAZARDS	Human and environment corrosive. When it contacts with organic substances, it breaks them into pieces and carbonize them because of its high water hammer property. If it touches to skin and living tissues it causes severe burns. It causes severe irritation in the eyes.
FIRST AID	Take off the clothes which are contaminated with sulphuric acid immediately. Take a shower immediately. If acid contacts with skin, wash it with plenty of water. Wrap the skin with sterile bandage and go to a doctor. If acid is swallowed, drink plenty of water. Do not vomit, go to a doctor. If it contacts with eyes: keep the eyelids open and wash them for 15 minutes ceaselessly. Go to a doctor.
SAFE TRANSPORT AND STORAGE	Tankers and depots in which sulphuric acid is transported or kept must be very clean. Draining and transferring acid must not be under pressure.

APPENDIX-16 An example for Exercise Evaluation Form

FACILITY'S NAME: ..... DATE : ...../..../.....
EXERCISE TYPE : TABLE ( ) FUNCTIONAL ( ) REAL TIME : .....

EXERCISE'S PROCEEDING	**SUCCESSFUL**	UNSUCCESSFUL	**THOUGHTS (necessary to do)**	**SPEECHES (contributions)**
POLICY				
Appropriateness of decisions taken in ICS				
Guidance of daily works				
Adjustment with crisis management				
Efficiency of Distribution of tasks				
OPERATION				
Communication efficiency				
Efficiency of response to wounded people				
Application of command system				
Traffic control, surrounding security				
Appropriateness of equipments that are used				
Appropriateness of foreseen response plan				
Efficiency of response team				
Support of sources and foreseen response methods				
Efficiency of improvement operations				
Standard operating procedures				
Efficiency of different units				

LOGISTICS				
Efficiency of necessary internal-external support				
Sufficiency and use of sources				
Massive care-temporary housing				
Documents' preparation				
Determining and purchasing critical materials				
PLANNING				
Thinking necessary relations beforehand				
Thinking media relations in CEDM				
Thinking media relations in ICS				
Acknowledgement of stakeholders (domestic-foreign)				
Directing distributers to other facilities				
Precaution taken for not experiencing similar incident in other facilities				
Psychological support				
Directing customers				
Adopting work changes				
Fast damage assessment				
Planning wreck removal				
Regional evacuation-public relations				
Infrastructure services (transportation, water, canalization, LPG, electricity, communication band)				
Insurance and damage compensation activity				
Providing Security				
THE REPORT PREPARED BY: Name Surname : ..... Signature :				

GLOSSARY

Emergency: the bad effects of a small hazard, which can be handled with local facilities, on life, property and environment. For instance, a house fire which can be extinguished by local fire department would be described as an "emergency".

Disaster: the situations which the local facilities are not enough in coping with the bad effects of a hazard on life, property, environment, economy and cultural values. Natural events like earthquakes, floods, thunderbolts which require nationwide or international support and cause great loss of life and property are named as natural disasters.

Heavy damage: occurring of big fractures on the walls and the falling of the chimneys.

Active fault: the fault which was active at least for once and caused an earthquake for the past 10.000 years.

Flame: the visible part of burning.

Alluviual: the unbalanced sediments as a result of the materials like clay, silt, sand and gravel which are gathered in certain regions.

Main shock: the earthquake which happens between a foreshock and an aftershock and which is more destructive than the others.

Aftershock: the earthquakes which happen after the main shock and have less magnitude than the main one.

Concrete reinforced: a construction material which is made up of concrete and steel reinforcement materials together.

Mudflow: the downward mass movement of waterlogged soil and rock materials as a result of heavy rain from the mountain slopes and valleys in arid and semi-arid areas.

Earthquake hazard: it includes everything about an earthquake that might be dangerous for human life.

Earthquake: the trembling and shakings that happen on earth with the movements of the earth's crust.

Seismicity: the distribution of the sequences and the magnitudes of earthquakes in a certain area.

Natural disaster: the disasters which are caused by some natural events like earthquakes, floods, avalanches and landslides, etc.

Infill wall: the components which are made up of hollow bricks in order to separate various places. They are not a part of the supporting system but have an important effect on the earthquake response of a construction.

Reinforcement: the steel constituent which helps the carrying process with concrete reinforcement in concrete components.

Energy: different energy types which can be turned into different forms but still

remain the same amount of total energy; the skill of doing.

Epicentre: the closest spot to the focal point on earth. This spot is also the place where an earthquake is felt strongest.

Stirrup: a horizontal reinforcement which is placed in gaps to prevent the disintegration of the concrete in concrete components by horizontally encompassing it.

Fault: the the breaks and moves that happen where the plates/weakness that form the crust.

Over ruin: the total destruction of the constructions.

Observation: measuring the physical activities like earthquakes, te perature, pressure or winds which happen on or above the surface of the Earth.

Light damage: cracking of plasters and removing of little plaster parts.

Balk: rectangular concrete components which are both produced in horizontal and vertical forms to enable the supporting walls act together in masonry buildings and to prevent weakness as a result of the spaces opened in the walls.

Landslide: movement of soil and/or rocks by sliding on a plane surface.

Hypothermia: reducing of the body temperature in a way that the normal muscle and brain functions would be damaged.

Hypocenter: the spot within earth where fault breaks and the energy of an earthquake occurs. Actually the focal point is not a point but a line/surface still it is accepted as a point in the applications.

Geophysics: it is the science which examines the physical properties and activities of earth.

Geology: the science which examines the structure and materials, historical development and the processes that shape the earth's crust.

Piled foundation: it is the type of foundation that is applied with the piles with high bearing capacity and extends to the stratum when there are tall building heights and very bad ground conditions.

Short column: the case in which some columns are shorter than the others in reinforced concrete buildings as a result of both architectural and structural applications and there is the effect of more force.

Girder: horizontal bearings produced in rectangular forms that combine the vertical bearings to each other in reinforced concrete buildings.

Column: vertical supporting components which have the similar size of plans in reinforced concrete buildings.

Corrosion: the loss of the characteristics of concrete components by rusting as a result of moisture and water.

Cure: the curing process of the removed plaster in order to regain its stability

Magnitude: the amount of the energy that comes off during an earthquake. It is determined out from the records of the devices which record the earthquakes. Each earthquake has only one magnitude and it does not change according to the distance or other properties as in intensity.

Epicentre: the closest place to the focal point where an earthquake is felt strongest.

Focal depth: the shortest distance between the point where the energy of an earthquake comes off and the earth.

Focal point: the place where an earthquake happens under the ground.

Moderate damage: happening of little cracks on the walls, falling of big plaster pieces, slipping of bricks, little cracks on the chimneys and falling down of some parts of chimneys.

Foreshock: small shakings after the main shock. An earthquake is named as a foreshock on the condition that a larger earthquake happens in this area.

P-wave: it is the first wave that directly comes from the epicentre and arrives to the earthquake area in large earthquakes.

Partition: vertical bearing components whose ratio is seven in plan size in reinforced concrete buildings.

Raft foundation: the foundation type which is applied with a certain thickness when the constructions are higher and the ground conditions are not good enough.

Richter scale: the magnitude scale of the earth. It is the numerical scale of the energy released after an earthquake. Richter scales are used in order to measure the real size of earthquakes. This is called as "earthquake magnitude". The magnitude corresponds to an increase

of 30 times the amount of energy in each numbers. So there is 30 times energy difference between the earthquakes with 6.0 magnitudes and 7.0 magnitudes.

Risk: negative results caused by hazard. These results affect directly or indirectly life, houses, working places and their activities. Risks cannot be eliminated totally but it can be reduced. It is expre-sed as Risk = Hazard x Vulnerability

S-wave: second wave that comes after P wave during an earthquake. It is a seismic wave that shake earth surface up and down as vertical to direction movement.

Liquefaction: due to effect of an earthquake, complete loss off the bearing capacity as a result of increasing space water pressure and acting as a liquid of water logged, fine grained sand and silty layers.

Seismic gap: one part of fault that has caused an earthquake in the past but seismically inactive now.

Seismograph: it is a device that detects and records seismic waves. An inactive stable mass is detected as the other part moves during an earthquake in most of seismographs. Some seismographs detect vertical movements as some detect horizontal ones. Marks of waves are drawn on a mobile paper band with a vibratory pen. Arrival time is calculated between P and S waves. Time on a "seismo-graph" gives the distance between station and epicentre.

Seismography: the branch of science which examines how the earthquakes happen, how the seismic waves are transmitted in the earth, measuring devices and methods, evaluation of the records and other subjects related to earthquakes.

Seismology: the subdiscipline of geology which examines the formation of earthquakes, transmission of seismic waves, measuring and other subjects related to earthquakes.

Intensity scale: the scale that evaluates the intensity of an earthquake. In other words, intensity scales measure the reactions of animate and inanimate beings that are affected by an earthquake. When an earthquake occurs its effect on the area can be described by its severity. And the intensity of this earthquake is measured according to the intensity degree that the earthquake belongs based on the observations.

Intensity: it is the size of effect of an earthquake that occurs in any depth and felt on the earth. It depends on effects on physical structures and people. It based on observational data and standard scale prepared beforehand.

Evacuation: especially leaving and getting out away from area under threat.

Bearing component: a vertical or horizontal component that carries the vertical and horizontal forces that are effective on a construction.

Bearing system: the system as a combination of supporting components with the aim of carrying the external loads safely in a construction.

Hazard: events like earthquakes, floods, hurricanes, landslides, fires, explosions which might cause loss of life and property and restricts our daily lives.

Foundation: the bearing system that supports the building and enables the external loads to be passed to the foundation safely.

Triage: a coding and selection process of prioritizing patients and injured based on the severity of their condition in a phenomenon zone by healthcare organizations.

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Notes


Notes


Notes

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