RISK ASSESSMENT DOCUMENT

RISK ASSESSMENT

Risk analysis deals with the identification and quantification of risks of the airport equipment/ facilities and personnel who may get exposed to accidents resulting from the hazards at the proposed airport.

In the sections below, the identification of various hazards, probable risks during the construction and operation of the airport, maximum credible accident analysis and consequence analysis are addressed either qualitatively or quantitatively. Based on the risk assessment of various hazards, Disaster Management Plan has been formulated and presented.

OBJECTIVE OF RISK ASSESSMENT

- To find out values of magnitude and severity of consequences for each hazard. These will be in general but an informed judgment as to order of magnitude
- To use the information as means of prioritizing actions. It means which hazard requires the most work and how it will be tackled?
- To specify mitigation features as appropriate to each hazard
- To find the effectiveness of mitigation features in reducing the risk

Purpose of Risk Assessment

Although the purpose of risk assessment includes the prevention of occupational risks, and this should always be goal, it will not always be achievable in practice. Where elimination of risks is not possible, the risks should be reduced and the residual risk controlled. At a later stage, as part of a review programme, such residual risk will be reassessed and the possibility of elimination of the risk, perhaps in the light of new knowledge, can be reconsidered.

The purpose of this risk assessment is to evaluate the adequacy of the airport and aircraft security. This risk assessment provides a structured qualitative assessment of the operational environment. It addresses sensitivity, threats, vulnerabilities, risks and safeguards. The assessment recommends cost-effective safeguards to mitigate threats and associated exploitable vulnerabilities.

However, it is important to know that there are other methods that work equally well, particularly for more complex risks and circumstances. The approach to assessment will depend upon:

- The nature of the workplace
- The type of process
- The task performed
- Technical complexity

In some cases a single exercise covering all risks in a workplace or activity may be appropriate. In other cases, different approaches may be appropriate to different parts of a workplace.

Risk Estimated/Analysis

Risk analysis is conducted in two ways i.e.

- Qualitative Risk Analysis
- Quantitative Risk Analysis

Qualitative Risk Analysis

The objective of conducting a qualitative risk analysis is to acquire safety against recognized risks and to increase the alertness of management, team members, and all personnel who are vulnerable to them. The risk ranking and severity of consequences are given in **Table 1** and **Table 2**.

Table 1: Risk Ranking

Level of Harm	Severity of harm		
	Slight harm	Moderate Harm	Extreme Harm
Very unlikely	Very low risk	Very low risk	High risk
Unlikely	Very low risk	Medium risk	Very high risk
Likely	low risk	High risk	Very high risk
Very Likely	low risk	Very high risk	Very high risk

Table 2: Severity of Consequences

Minor injury 1	Minor damage to Aircraft/ building/people A person can go home with first aid treatment or bandage to wounds
Injury (no time lost) 2	Damage but repair cost is low Person needs treatment till 2 days
Injury (time lost) 3	High damage repair cost more Person needs treatment for more than 2 days
Major Reportable injury 4	Very high damage Repair cost Person admitted to hospital for needed treatment
Fatality 5	Major damage major cost Death of a person on the spot or in hospital during treatment

Quantitative Risk Analysis

Quantitative risk analysis is more focused on the implementation of safety measures that have been established, in order to protect against every defined risk. By using a quantitative approach, an organization is able to create a very precise analytical interpretation that can clearly represent which risk-resolving measures have been most well-suited to various project needs.

Risk can be evaluated and ranked according to the severity and frequency of occurrence. The risk rating and quantitative risk analysis for the project are given in **Table 7.3** and **Table 7.4**.

Table 3: Risk Rating

High Risk	15-25
Moderate Risk	8-12
Low risk	1-6

Table 4: Quantitative Risk Analysis for the Project

Operation	Persons Affected	Hazard Type	Risk Level	Severity
Aircraft Takeoff and Landing noise	Airport Staff/ Residences below flight path	Physical	11	Moderate
Aircraft Takeoff and Landing(Fatalities)	Airport Crew and Passenger	Physical	25	High Risk (Serious)
Lifting/ Moving of luggage	Airport Staff	Physical	3	Minor
Movement of Staff near Aircraft	Airport Staff	Physical	2	Minor
Contamination/cap not fitted properly	Pilot, Crew and Passenger	Physical	10	Moderate
Door Detachment	Crew	Physical	10	Moderate
Turning Rotor	Crew	Physical	10	Moderate
Rotor Break Application	Pilot, Crew and Passenger	Physical	12	Moderate
Lack of Communication	Airport Staff	Physical	10	High Risk (Serious)
Lack of Communication	Pilot and Passenger	Physical	20	High Risk (Serious)
Engine design	Operator, Crew And Passenger	Physical	20	High Risk (Serious)
Ground Signals for landing	Pilot, Crew and Passenger	Physical	12	Moderate
Visibility	Pilot, Crew and Passenger	Physical	20	High Risk (Serious)
Altitude	Pilot, Crew and Passenger	Physical	20	High Risk (Serious)
Fuel Exhaustion/Starvation	Pilot, Crew and Passenger	Physical	15	Moderate
Engine Software Failure	Pilot, Crew and Passenger	Physical	15	High Risk (Serious)
Obstacles	Pilot, Crew and Passenger	Physical	20	High Risk (Serious)

Hazard Identification

Identification of causes and types of hazards is the primary task for planning for risk assessment. Hazard can happen because of the nature of fuels/ chemicals handled and also the nature of process involved.

An aviation accident is the worst nightmare of every pilot, crew or passenger that has ever ridden in an aircraft. Although air travel is one of the safest forms of transportation, accidents do happen with dramatic and terrifying results. The causes of these aviation accidents vary greatly depending on specific circumstances and problems that may develop during the flight process.

Human error, Runway, Descent and landing accidents, taxi and takeoff mishaps, mechanical failures, pilot errors, fuel mismanagement, and poor weather are only some of the many plights that can lead to injuries or death in the sky. Although popular opinion may suggest that aviation accidents are caused by "bad luck", in many situations these incidents can be completely avoided through careful preparation and effective safety techniques. When flight crew and pilots do their jobs correctly, aviation accidents are much less likely to occur. Some hazards are listed below:

- Descent and Landing Hazard
- Human Error
- Weather Error
- Mechanical Failure and
- Other hazards

Hazard during Construction Phase

The main risks associated with the construction of the project are mainly electrical and mechanical failures or lack of safety precautions. During the construction phase, the responsibility of maintaining safety is jointly on the project developer and the deployed contractors. The risks and hazards associated with various construction activities are listed in **Table 5**. The mitigation measures/ safe working practices have also been mentioned in the **Table 5**.

Table 5: Risk & Hazard Associated and Control Measures

Risks & Hazards Associated with Construction	Control Measures
Manual Handling Strains and sprains Incorrect lifting Too heavy loads Twisting Bending Repetitive movement	Exercise/warm up Get help when needed Control loads Rest breaks/ no exhaustion No rapid movement/ twisting/ bending/ repetitive movement Good housekeeping
Falls - Slips - Trips Falls on same level Falls to surfaces below Poor house-keeping Slippery surfaces Uneven surfaces Poor access to work areas Unloading materials Wind Falling objects	Good Housekeeping Tidy workplace Guardrails, handholds, harnesses, hole cover, hoarding, no slippery floors/ trip hazards Clear/ safe access to work areas & egress from work areas Dust/ water controlled environment as much as possible

Risks & Hazards Associated with Construction	Control Measures
Fire Flammable liquids/gases like LPG, diesel storage area and combustible building materials Poor housekeeping Grinding sparks Open flames, absence of fire hydrant network.	Combustible/ flammable materials properly stored/ used Good housekeeping Fire extinguishers made available & fire hydrant network with reserve Fire water (as per NFPA Code) Emergency preparedness plan in case of fire or collapse of structure. Regular mock drills
Absence of Personal Protective Equipment Lack of adequate footwear Head protection Hearing/eye protection Respiratory protection Gloves, goggles	Head/face - footwear - hearing/ eye - skin – respiratory protection provided Training for use of PPEs Proper maintenance of PPEs
Electricity Electrocution Overhead/underground services Any leads damaged or poorly insulated Temporary repairs No testing and tagging Circuits overloaded Nonuse of protective devices.	All electrical equipment in good condition and earthed No temporary repairs No exposed wires & good insulation No overloading Use of protective devices Testing and tagging No overhead/ underground services
Scaffolding Poor foundation Lack of ladder access Insufficient planking Lack of guardrails and toe boards Insufficient ties or other means All scaffolds incorrectly braced or stabilized to prevent overturning.	All scaffolds correctly braced and stabilized 3:1 height to base ratio Firm foundation, plumb and level Ladder access provided and used Proper platform Planks secured Guardrails and toe boards
Ladders Carrying loads Not secured against dislodgement Defective ladders Not sufficient length Wrong positions Incorrectly placed (angles, in access ways, vehicle movements	Secured against movement or footed Ladders in good condition and regularly inspected for faults Extend 1m above platform and placed at 4:1 angle Out of access ways, vehicle movements No carrying loads while climbing 3 points of contact Use for access only, not working platforms
Excavations Trench collapse Undetected underground services Falls Hazardous atmosphere	Knowledge of Soil stability No water accumulation and pumping facilities Material 600mm from edge Clear of suspended loads Hard hats/PPE Ladders Atmospheric testing

Risks & Hazards Associated with Construction	Control Measures
	Traffic controls Emergency Plan.
Noise Unknown noise levels Known noise levels over 85 decibels	Levels below 85 decibels Proper protections.
Falling Material Fall during carrying / lifting materials Dislodged tools and materials from overhead work areas.	Materials to be secured kept away from edge toe boards Use of hard hats
Cranes & Lifts Display of carrying capacity i.e. loads (No. Of person), incorrectly slung, defective lifting equipment, unsecured loads, craning in close proximity to building Falls Falling materials.	Periodic testing by competent authority Correctly slung/secured loads, lifting equipment good condition Use of proper hand signals Falls while unloading controlled
Visitors Presence at site Falls Struck by dropped materials Road accidents Insufficient hoarding or fencing - pedestrian access past site Mechanical plant movement on and off site	Sufficient hoarding Fencing and barricades Safe pedestrian access past site traffic management for loading and delivery Construction separated from occupied areas of projects.

Hazard during Operation Phase

Natural Disasters

Natural Disasters are often sudden and intense and results in considerable destruction, injuries and death disrupting normal life as well as the process of development. Disasters due to natural calamity could be as follows:

- Earthquake
- Flood
- Storms/ Cloud burst/lightning/extreme weather conditions

Aircraft Accident Related Disasters

Aircraft accident occurs near and within the airport during landing/take-off/taxing due to malfunctioning of some mechanism like undercarriage, failure of hydraulic power supply, non-functioning of one or more engines, malfunctioning of landing gear, sudden fire in aircraft while enrooting, unforeseen circumstances in which pilot loses control over aircraft and improper signaling by air traffic control tower (ATC). Disasters due to emergencies could be as follows:

- Aircraft accident at airport;
- Aircraft accident off airport; and
- Hazardous material emergency, hydrocarbon spills followed by fire

Terror Attack, Plane Hijack, Sabotage

The threat of bombing vital installations by enemy action or sabotage cannot be ruled out near and within the airport. Since airports are vital facilities prone to terror attack/ sabotage or plane hijacking, the threat to an airport could be from ground as well as from the air. Disasters due to external factors are on account of unlawful seizure, sabotage and bomb threat.

Fuel Storage at Airport

Fuel storage area has been one of the prime concerns as far as airport risk and hazards are concerned. There will be no fuel storages at the proposed airport site but drums of High Speed Diesel (HSD) for the DG sets will be available at the site. It is proposed that the oil company which will supply the fuel for the proposed airport will provide the necessary arrangements for filling.

Risk Assessment & Evaluation

Preliminary hazards analysis is based on the philosophy "*Prevention is better than cure*". This calls for identification of hazards, quantification of risk and further suggests hazard mitigating measures. An assessment of the conceptual design is conducted for the purpose of identifying and examining hazards related to operation of the proposed airport, utility and support systems, environmental factors and the safety measures.

Maximum Credible Accident Analysis (MCAA)

Hazardous substances may be released as a result of failures or catastrophes, causing possible damage to the surrounding area. This section deals with the question of how the consequences of the release of such substances and the damage to the surrounding area can be determined. Major hazards posed by flammable storage can be identified taking recourse to MCA analysis. MCA analysis encompasses certain techniques to identify the hazards and calculate the consequent effects in terms of damage distances of heat radiation, toxic releases, etc. A host of probable or potential accidents of the major units in the airport premises arising due to use, storage and handling of the hazardous materials are examined to establish their credibility. Depending upon the effective hazardous attributes and their impact on the event, the maximum effect on the surrounding environment and the respective damage caused can be assessed.

Damage Criteria

The fuel storage may lead to fire and explosion hazards. The damage criteria due to an accidental release of any hydrocarbon arise from fire and explosion. Contamination of soil or water is not expected as these fuels will vaporize slowly and would not leave any residue. The vapors of these fuels are not toxic and hence no effects of toxicity are expected.

Fire Damage

A flammable liquid in a pool will burn with a large turbulent diffusion flame. This releases heat based on the heat of combustion and the burning rate of the liquid. A part of the heat is radiated while the rest is converted away by rising hot air and combustion products. The radiation can heat the contents of a nearby storage or unit to above its ignition temperature and thus result in a spread of fire. The radiation can also cause severe burns or fatalities of workers or fire fighters located within a certain distance. Hence, it will be important to know before handling the damage potential of a flammable liquid pool likely to be created due to leakage or catastrophic failure of a storage tank. **Table 6** provides the damage effect on equipment and people due to thermal radiation intensity.

Table 6: Damage due to Incident Radiation Intensities

Sl. No.	Incident Radiation (kW/m^2)	Type of Damage Intensity	
		Damage to equipment	Damage to people
1	37.5	Damage to process equipment	100% lethality in 1 minute 1% lethality in 1 second.
2	25.0	Minimum energy required to ignite wood at indefinitely long exposure without a flame	50% Lethality in 1 minute Significant injury in 10 second
3	19.0	Maximum thermal radiation intensity allowed on thermally unprotected adjoining equipment	---
4	12.5	Minimum energy to ignite with a flame; melts plastic tubing	1% lethality in 1 min.
5	4.5	---	Causes pain if duration is longer than 20 sec, however blistering is un-likely (First degree burns)
6	1.6	---	Causes no discomfort on long exposures

Source: Techniques for Assessing Industrial Hazards by World Bank

Damage due to Explosion

Explosion is a sudden and violent release of energy accompanied by the generation of pressure wave and a loud noise. The rate of energy release is very large and has potential to cause injury to the people, damage the airport and nearby property etc. The effect of overpressure can directly result in deaths to those working in the direct vicinity of the explosion.

DISASTER MANAGEMENT PLAN

Disaster

A disaster can be defined as an "occurrence of such magnitude so as to create a situation in which normal pattern of life within a facility is suddenly disrupted, adversely affecting not only the personnel and property within the facility but also in its vicinity."

A Disaster Management Plan (DMP) is an integral part of an Airport operation for effective and safe management of technical and non-technical emergencies. This is important for effective management of an emergency situation to minimize losses to people, property and both at and around the Airport.

The objectives of the emergency planning are to describe the Airport's emergency response organization, the resources available and applicable response actions. Thus, the objectives of emergency response plan can be summarized as follows:

- Rapid control and containment of the hazardous situation;
- Minimizing the risk and impact of an event/accident; and
- Effective rehabilitation of the affected persons, and prevention of damage to property.

Disasters are always unwanted part of situation & difficult to control. Aviation disasters create huge losses of property and people. Disaster control plans are successfully established operated & thus involvement of local people is paying in time.

To be prepared in advance for any sort of disaster which may occur as a consequence of natural calamities is utmost important. Disaster control plan gives ideas to plan in advance to avoid & minimize the damage in all aspects. It is a team effort & remarkably pays if due attention is paid in time to plan & execute the action plan for disaster control. As the name suggests the team members in this plan are many & all must know their duties to perform their respective roles in least time, at positions asked & as per needs of the situation arises.

On-site Incidents

Such an occurrence may result in on-site implications like:

- Fire and/ or explosion;
- Leakage of flammable material;
- Release of toxic material (sabotage);
- Crash landing;
- Bomb threat; and
- Natural calamities like earthquake etc.

Off-site Incidents

Incidents having off-site origins can be:

- Air raids; and
- Crashing of aircraft i.e. while landing or Take-off.

Other Incidents

Other incidents, which can also result in a disaster, are:

- Agitation/ forced entry by external group of People;

- Sabotage; and
- Hijacking

An important aspect of the disaster is its unforeseen nature. Thus, by definition itself, a disaster is impossible to control completely. However, occurrence of events, which lead to a disaster, may be minimized through proper technology and engineering practices. The DMP plan should be prepared in accordance with the Civil Aviation requirement laid down by the Director General of Civil Aviation (DGCA), the National Disaster Management Act, 2005, the National Building Code as well as various code provisions of the International Civil Aviation Organization (ICAO) including other International conventions and acts.

Emergency Resources and Equipments

- High mast lighting on generator trailers is essential for protracted night operations. A source for fuel for the generators should be identified.
- A trailer equipped with sufficient backboards and stretchers to accommodate 250+ causalities.
- Sufficient body bags and causality identification tags.
- A trailer mounted medical disaster kit containing long shelf life items such as bandages, compresses, splints, trauma kits etc.
- Tents and tarpaulins for use during inclement weather.
- A trailer / container with stakes, heavy hammer, colored tape and poles to mark are at an accident site and to identify triage sites and evacuation routes. These stakes can also be used to mark locations where bodies, voice and flight recorders, and aircraft parts are found.
- Heavy cranes to lift debris during rescue activities
- Buses and other vehicles to transport ambulatory passengers.
- Vehicles to transport dead to temporary morgue.
- Tow bars and wing / fuselage jacks for all aircraft types using airport.
- Pneumatic lifting bags and compressors.
- Heavy cranes and forklifts.
- Aircraft loading equipment and tow tractors.

Emergency Procedures

Rough Weather Emergency

In case of storm approaching the area, prior warning will be received. Therefore, the radio room must receive daily weather forecast, which must be signed by the Air Traffic Controller or his designated officer. It is strongly suggested that specific weather report be prepared or obtained, as it would be more accurate than general report and three stages of operation control shall be followed:

- **Green Status:** This status applies when weather is good. Operations can go on smoothly as planned.
- **Yellow Status:** This is an alert stage when rough weather is expected or may be expected, hence alert must be maintained with all precautions with emergency status but operations can continue.

- **Red Status:** Emergency situation- operations suspended. All activities are to be controlled by the designated officer of the Airport.

Aircraft Crash within Airport Fire Service Turn-out Area

The Airport Fire Service turnout area shall include the entire airport area as well as the areas in the vicinity of the airport up to an arc of a circle centered at the runway threshold of 5 km radius, and 3 km from the perimeter of the airport.

Crash action is declared for aircraft accidents on the aerodrome as well as off the aerodrome. The Air Traffic Controller shall activate the crash alarm immediately if one of the following events occurs:

- When the aircraft accident/ crash is sighted by the Air Traffic Controller or the sighting is reported to the Air Traffic Control by any of the reliable sources.
- When the aircraft has been cleared to land and fails to land within 5 minutes of the estimated time of landing and the communication with the pilot is not able to be re-established.
- During poor visibility- when the Air Traffic Controller is unable to sight the runway, and the aircraft, which has been cleared for take-off or land, fails to respond to the Air Traffic Control's repeated calls.

Aircraft Crash outside Airport Fire Service Turn-out Area

If an aircraft accident occurs outside the Turnout Area, the procedures for Crash Action outside the Airport Fire Service Turnout Area shall be as followed.

- The decision to declare the Crash Action rests with the Air Traffic Control.
- Local Fire Service will be fully in charge and resume command of the aircraft fire-fighting and rescue operations at the crash site.
- State Authorities/ District Administration will be overall in charge of all ground operations at the scene. All the other agencies and services involved will activate their respective emergency operations plans to support the State Authorities/ District Administration in the mitigation of the aircraft accident.

Fire on the Ground (Aircraft Movement Area)

An aircraft can catch fire when it is taxing in the movement area or parked at an aerobridge or remote bay. Such a scenario can arise from a defect or malicious act, and may develop into a major disaster. The resources required to mitigate are thus identical to that of an aircraft crash within the Airport Fire Service Turnout Area.

When the aircraft on the ground catches fire and is sighted by the Air Traffic Controller or reported to the Air Traffic Control by any reliable sources, the Air Traffic Controller shall activate the Airport Fire Service through the crash alarm communication system and provide details of the aircraft fire, for example:

- Location of aircraft;
- Nature of fire (e.g. undercarriage fire, engine fire);
- Number of Passenger On Board (POB); and
- Presence of dangerous goods, if known.

The Air Traffic Controller shall give clearance to the responding fire vehicles to enter the runway/ taxiway as soon as possible.

Fire on the Ground (Airport Buildings & Installations)

Fire may occur at any of the airport installations and buildings. If out of control, such a fire may cripple the key airport facilities and disrupt the normal airport operations. During a fire occurrence, however small it may appear to be, person who discovers it shall:

- Raise the fire alarm via the nearest manual call point. If no manual call point is readily available, raise the alarm by other available means;
- Inform the Airport Fire Service immediately of the exact location of the fire; and
- Operate a suitable fire extinguisher where readily available, or any water hose reel within range.

Bomb Emergency Management

Bomb threats by their very nature indicate the very real potential for serious damage to aircraft, buildings and property, as well as the potential for serious injuries or loss of life. A bomb threat could be written, recorded, or communicated orally. Every threat must be taken seriously and dealt with in such a way as to not create panic. The call recipient must remember to do many things, all of which will aid in the search for the device and provide authorities with as much information as possible for their later investigation. The following immediate actions are suggested:

- Any aircraft that is suspected of carrying a bomb should be parked in Isolated Bay Area.
- All passengers should be evacuated immediately by the fastest means whilst the local or airport police arrange for bomb disposal experts to attend and search the aircraft. All baggage should be left on board until it has been searched and cleared. Airport rescue and fire services should be standby at point no less than 300m from air craft and predetermined procedure for bomb alerts should take into account the calling of local authority services of fire, police, ambulance and hospitals.
- Air traffic control must maintain continuous communication with the rescue and firefighting services to ensure that they are kept updated in relation to any change in distressed aircraft condition.
- To attend to bomb threat calls received to aircraft, terminal building, vital installations and arising from unclaimed observed insides/outside the airport and safe neutralization of explosives devices found.
- As soon as an emergency is envisaged/ occurs, the Emergency chief or his alternate shall promptly communicate the information by a telephone or any other quickest mode of communication to the Inspector of Police, highest administrative officer and Fire brigade. The information should include the location in question and the degree of emergency (anticipated, eminent or actual).
- To conduct regular training of airport security police and staff, airline agencies working at the airport. This training is based for identification of explosives.

Forced Landing of Hijacked Aircraft

Every airport is faced with a threat of hijacked aircraft forced to land at the aerodrome all airports have standard operating procedures to deal with such eventualities. An outline of the procedure to be followed to manage this contingency is given below.

- A separate isolated parking place away from the parking aprons and far away from the terminal complex is earmarked for parking such aircraft after it has landed.
- All messages from the hijackers are to be relayed by air traffic control to the concerned agencies.
- Information must be promptly given to local police department, State Government Authorities and concern Airline Company.
- Information will also be passed to neighboring airports for alert through airport officials and IAF authorities.
- Fire tender and ambulance be kept ready for emergency situations.
- Local hospital, fire services and ambulance services made alert for possible aid.

Onsite and Offsite Emergency Plan

On-Site Emergency: If accident/ incident takes places in an Airport, its effects are confined to the Airport premises, involving only the persons working in the Airport and the property inside the Airport it is called as On-site Emergency.

Off-Site Emergency: If the accident is such that it affects inside the Aircraft are uncontrollable and it may spread outside the Airport and affect the premises, it is called as off-site emergency.

The main objectives of an emergency plan are to control and contain the incident/ accident and if possible, eliminate it and to minimize the effects of the incident on person, property and environment. Each Airport should prepare an emergency plan incorporating details of action to be taken in case of any major accident/ disaster occurring inside the Airport. The plan should cover all types of major accident/ occurrences and identify the risk involved in the airport. Mock drills on the plan should be carried out periodically to make the plan foolproof and persons are made fully prepared to fight against any incident in the airport.

The Emergency Control Centre (ECC) shall ensure a mock drill of the onsite emergency plan is conducted at least one in every six months. A detailed report of the mock drill conducted under rule shall be made immediately available to the Inspector and Chief Inspector. Main elements of On-site Emergency plans:-

- Leadership and Administration,
- Role and Responsibilities of Key Personnel,
- Emergency action,
- Light and Power,
- Source of energy control,
- Protective and rescue equipment,
- Communication,

- Medical care,
- Mutual Aid,
- Public relation,
- Protection of vital records and
- Training and
- Periodical revision of plan.

Onsite Emergency Plan

The emergency action plan includes

Emergency Control Centre: The operations to handle the emergency are directed and coordinated by emergency control center. The facilities will be made available in the emergency control are:

a) Internal and external communication.
b) Computer and other essential records.
c) Daily attendance of workmen employed in Airport.
d) Pollution records.
e) Walky-talky.

Assembly Points: A safe place far away from the Airport has been pre-determined as assembly point where in case of emergency personnel evacuated from the affected areas are to be assembled. The Airport workers, contract workers and visitors will assemble in assembly point in case of emergency and the time office clerk should take their attendance so as to assess the missing person during emergency.

The Key Personnel for Onsite Emergency: The General Manager of the airport will act as main controller. His duties are to

a) Assess the magnitude of the situation and decide whether the evacuation of staff from the Airport is needed.
b) Exercise and direct operational control over areas other than those affected.
c) Direct and control rehabilitation of affected area after emergency.
d) Intimate Off-site Emergency controller if the emergency spreads beyond the Airport premises and likely to affect the surrounding area etc.

Escape Route: The escape route from Airport should be clearly marked. The escape route is the shortest route to reach out of the affected area to open area, which leads to assembly point. This route should be indicated on the layout plan attached to the On-site Emergency Plan.

Evacuation Plan: All non-essential staff should be evacuated from the emergency site. As soon as the emergency siren rings the staffs have to move to the assembly point. The closing procedure in case of emergency should be prepared and kept ready and responsible person should be nominated for the purpose.

Emergency Facilities: The following facilities will be provided at Airport to tackle any emergency at any time.

- Fire protection and firefighting facilities.
- Emergency lighting and standby power.
- Emergency equipment and rescue equipment
  a. Breathing apparatus with compressed air cylinder.
  b. Fire proximity suit.
  c. Resuscitator.
  d. Water gel Blanket.
  e. Low temperature suit.
  f. First aid kit.
  g. Stretchers.
  h. Torches.
  i. Ladders.

Offsite Emergency Plan

Central Control Committee:

- Incident and Environment Control Committee.
- Fire Control Committee.
- Traffic control, Law and order, Evacuation and Rehabilitation Committee.
- Medical help, Ambulance and Hospital Committee.
- Welfare, Restoration and Resumption Committee.
- Utility and Engineering Services Committee.
- Press, Publicity and Public Relations Committee.