




GOVERNMENT OF THE PEOPLE'S
REPUBLIC OF BANGLADESH
MINISTRY OF POWER, ENERGY &
MINERAL RESOURCES
POWER DIVISION
BANGLADESH POWER DEVELOPMENT BOARD



**Vol 5: EMERGENCY
RESPONSE AND
DISASTER
MANAGEMENT
PLAN**

Prepared under
Environmental
Impact Assessment
(EIA) Study for
Repowering of
Unit-4 of Ghorashal
Power Station



Table of Contents

1	Introduction	1
1.1	IMPORTANCE OF THE ERP	1
1.2	SCOPE OF THIS ERP	1
1.3	EMERGENCY RESPONSE ORGANISATION	1
1.3.1	<i>The Incident Response Team (IRT)</i>	2
1.3.2	<i>The Emergency Response Group (ERG)</i>	2
1.3.3	<i>The Incident Management Team (IMT)</i>	2
1.4	EMERGENCY RESPONSE REPORTING REQUIREMENT	3
1.5	EMERGENCY RESPONSE INTERFACE & ESCALATION PROTOCOL	3
1.6	INCIDENT COMMAND ACTIVATION	8
1.7	ACRONYMS AND ABBREVIATIONS	8
2	Management Strategy	9
3	Prevention	9
3.1	INTRODUCTION	9
3.2	EMERGENCY RISK MANAGEMENT	9
3.3	PREVENTION THROUGH MITIGATION MEASURES	10
3.4	REVIEW OF RISKS	10
3.5	REVIEW OF OTHER ERP'S	11
4	Preparedness	11
4.1	RESOURCE SETUP- FIRE DETECTION AND PROTECTION FACILITIES	11
4.2	TRAINING	13
4.3	PREPAREDNESS ACTIVITIES	13
4.4	EXERCISES	14
4.5	UPDATING THE EMERGENCY CONTACT LIST	14
4.6	LOCATION OF EMERGENCY RESPONSE AND SUPPORT PERSONNEL	14
4.7	MEETINGS	14
5	Response	15
5.1	INTRODUCTION	15
5.2	NOTIFICATION AND ACTIVATION OF THE ERG	15
5.3	EMERGENCY RESPONSE GROUP	15
5.4	ERG AND SUPPORT TEAM INDIVIDUAL ROLES AND RESPONSIBILITIES	17
5.5	CONTACT DETAILS	19
5.6	CALL OUT AND DELEGATION OF AUTHORITY	19
5.7	EMERGENCY RESPONSE CENTRE (ERC) INITIAL ACTIONS	19
5.8	FORMAL UPDATES OF INFORMATION TO ERG	20
5.9	GOVERNMENT, KEY STAKEHOLDERS & MEDIA RESPONSE	20
5.10	EXTERNAL NOTIFICATIONS	20
5.11	PUBLIC RELATIONS AND MEDIA	21
6	Recovery	21
6.1	RECOVERY MANAGEMENT	21
6.2	CLEANUP	21
6.3	INVESTIGATIVE FOLLOW-UP	22
7	Emergency Scenarios	22

7.1	KIDNAP AND/OR EXTORTION	22
7.2	CIVIL UNREST OR WAR THREAT	22
7.3	BOMB THREAT	23
7.4	PANDEMIC	23
7.5	INSTALLATION LOSS OR SIGNIFICANT BUSINESS LOSS	23
7.6	SPILLS OF FLAMMABLE LIQUIDS (POLLUTION INCIDENT)	23
7.7	FIRE AND EXPLOSION EMERGENCY PREPAREDNESS PLANNING	24
7.8	PREPARING FOR AN ELECTRICAL POWER OUTAGE	28
7.9	FLOOD CONTINGENCY PLAN	29
	GREEN - ALERT	31
	AMBER – ALERT	32
	RED - ALERT	33
7.10	TORNADO EMERGENCY	33
	<i>A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. It is spawned by a thunderstorm and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly.</i>	33
	<i>Tornado Facts</i>	33
	<i>Before A Tornado</i>	34
	<i>During A Tornado</i>	34
	<i>After A Tornado</i>	35
7.11	EARTHQUAKES EMERGENCY	36
7.12	EXTENDED EMERGENCIES	43
7.13	SUPPORTING INFORMATION	44
	Attachment 1 - Incident Situation Update Procedure Checklist	44
	Attachment 2 - Kidnap and Extortion Checklist	45
	Attachment 3 – Government, key stakeholder & Media Holding Statement	47
	Attachment 4 - Initial Statement to Staff	48
	Attachment 5 - First To Arrive Procedure	49
	Attachment 6 - Security and Reception Standing Instruction	50
	Attachment 7 – BPDB Emergency Response Centre	51
	Attachment 8 – Emergency Response Centre Equipment List	52
	Attachment 9- Telephone Call Record	55
	Attachment 10 – General Notification	56
	Attachment 11 - Government Emergency Notification	58
	Attachment 12 - Emergency Response Log	60
	Attachment 13 - Bomb Threat Response Actions Response Actions	61
	Attachment 13a - Bomb Threat Checklist	63
	Attachment 14– Format for Urgent Facsimile Message	67
	Attachment 15 - Terrorist Threat or Action Against company personnel or facilities	68

1 Introduction

1.1 Importance of the ERP

An Emergency Response Plan (ERP) is to provide a systematic approach to the protection of employees, assets and the environment from impact of serious incidents. It can be defined as a plan that encompasses organizing, coordinating and implementing a range of procedures to prevent, mitigate, respond to and recover from the consequences of an emergency event. The concept is designed to be applied to all incidents, regardless of nature, severity, or location. Although it is flexible in nature, acceptance and application of the concept should be viewed as a critical factor in our ability to organize and manage incident response

A well-constructed ERP will prevent a minor incident from becoming a disaster, save lives, prevent injuries and minimize damage to property and the environment. It facilitates a rapid and effective emergency response and recovery; provides assistance to emergency and security services; implements an effective evacuation plan if required and communicates vital information to all relevant persons involved in the transport emergency (both internal personnel and external agencies) with a minimum of delay. It outlines the necessary resources, personnel, and logistics, which allow for a prompt, coordinated, and rational approach to a transport accident. The plan will contain sufficient detail to enable those involved in the response to effectively carry out their duties.

The goals of the ERP are to:

- Provide for clear lines of authority and communication during incident and crisis events;
- Provide a means by which trained people and resources are available to those managing the incident or crisis event.

Possible emergency events that have been identified for this project are; Immediate medical evacuation due to personnel injury, traffic accidents (road), leakage of hazardous materials (asbestos), civil disturbance/riot, terrorist events/threats and gas leak/explosion.

1.2 Scope of this ERP

The scope of this ERP is to manage emergency events during the demolition of the old boiler in Unit 4, during the construction of the new HRSG on the same location and during the operation phase of the Unit 4 power plant itself. This is a preliminary ERP developed by the design consultant to establish general guidelines and response procedures for the management of emergency events. This ERP also establishes an emergency management command structure and mechanisms for review, oversight and accountability.

1.3 Emergency Response Organisation



1.3.1 The Incident Response Team (IRT)

The Incident Response Team (IRT), based at Ghorashal plant location, is trained and responsible for dealing with all envisaged incidents and emergencies situations which may occur at the location. Where additional support in the way of resources and advice may be required by the IRT at a remote location this will be requested through and provided by the Dhaka Office ERG. On all occasions that a remote location IRT is mobilised due to an incident or emergency situation the ERG Manager must be notified immediately.

The IRT is chaired by Plant Manager and includes senior staff from HR, OHSE and Logistics department within the plant.

The IRT is responsible for monitoring the safety of the repowering of existing plant and coordinating and responding to all emergency events during the decommissioning and construction of combine unit and directly report to ERG Leader.

1.3.2 The Emergency Response Group (ERG)

The Emergency Response Group (ERG) is based in the BPDB Head Office in Dhaka, and is responsible for providing tactical response, support, assistance and advice to all incident and emergency situations at site/location and for providing operational response to any emergency situation which may occur in the or affecting Head Office. This plan describes how ERG should handle both the "technical" crises e.g. fire, explosion, oil spill, and "social" crises e.g. illness, injury, kidnap, civil unrest. On all occasions that the ERG is mobilised due to an incident or emergency situation the Incident Management Team Leader must be notified immediately.

The function of the ERG is to coordinate and oversee arrangements to ensure that the IRT meets its emergency management obligations. The Chief Engineer of BPDB will be the Chair of the ERG and will nominate an Emergency Response Coordinator to coordinate with representatives from various agencies and also senior staff from HR, Finance, HSE, Logistic, Security, IT and public affairs department within the BPDB.

1.3.3 The Incident Management Team (IMT)

The Incident Management Team (IMT) is the corporate body located in the BPDB Headquarter in Dhaka, with the responsibility to define and control strategy for major incidents. A strategic response is defined as a situation arising from single or multiple incidents or emergencies that escalate to a point beyond which significant damage to the Company's business could result, including commercial and reputation damage, significant financial loss, shareholder loss of confidence and damages resulting from litigation. When a potential strategic situation appears likely the IMT will be mobilised to manage issues pertaining to the reputation and the continued commercial wellbeing of the Company. The IMT may however also be called upon to address some of the tactical roles that would normally be the responsibility of the ERG, for example, if the Dhaka Office were out of action or in the event of an evacuation from a country, which may equally limit the ERG's capability.

The IMT is chaired by the Member-Generation of BPDB and includes high level representation from the Ministry of Energy and Power, Bangladesh Army, Police Department, Fire Department, District Commissioner's Office and the Disaster Management Bureau (DMB)

1.4 Emergency Response Reporting Requirement

The Emergency Response Reporting Protocol, as shown below, represents the overall reporting protocol for an incident occurring at GPS site. The diagram outlines who should inform whom, when an incident occurs on the sites.

1.5 Emergency Response Interface & Escalation Protocol

The relationship between the IMT, the ERG and Remote Location IRT and a classification of emergencies is illustrated as a matrix in Table 1.1 “Emergency Response Escalation Protocol”. The matrix gives a guideline to the required emergency response

Incident Command Structure

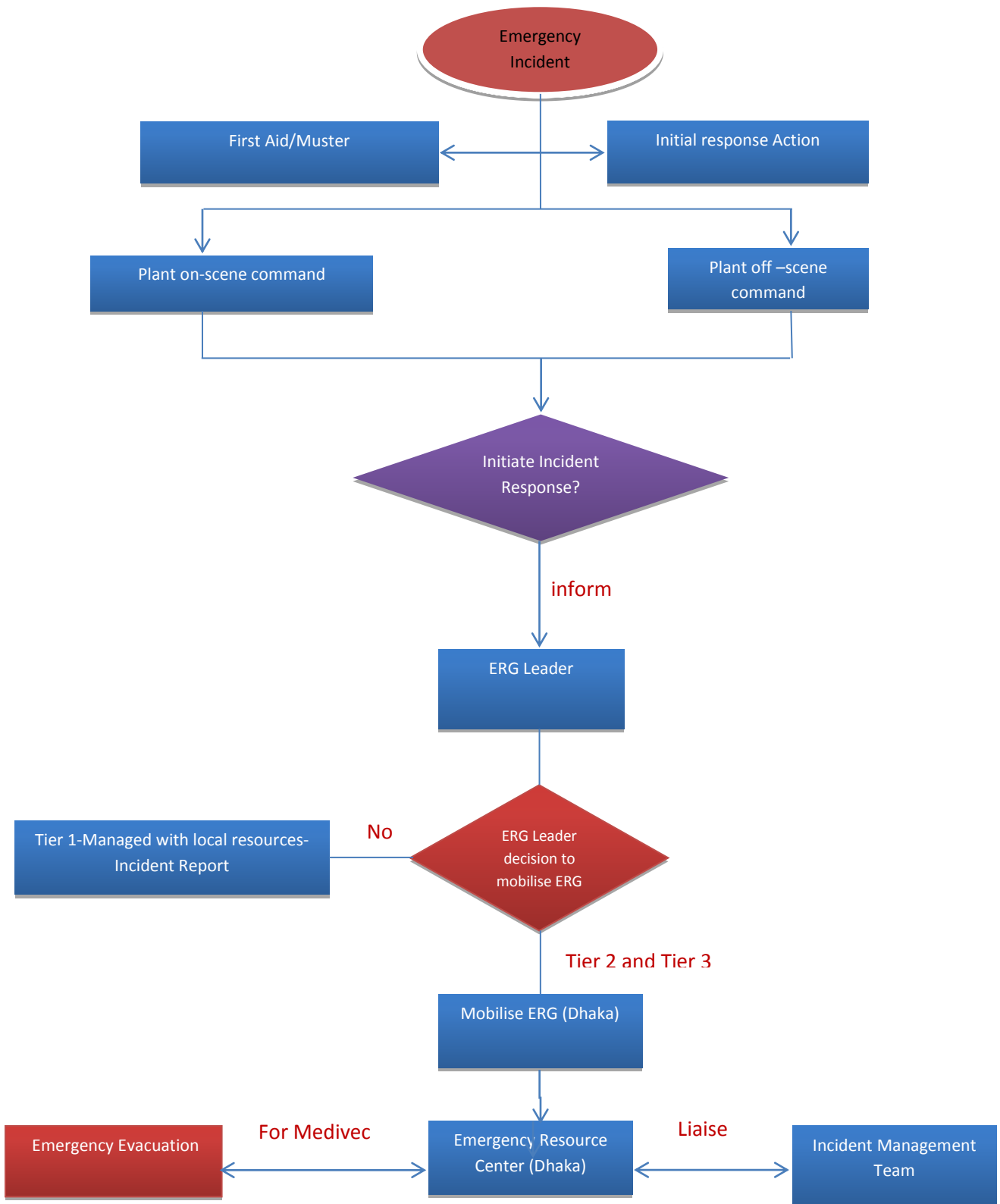


Table 1: Emergency Response Escalation Protocol

Impact/ Consequence	Health & Safety	Natural Environment	Reputation Government Community Media	Financial \$	Civil Unrest Hartals	Definition	Country Threat Level	Escalation →				Site specific IRT Members
								Operation Sites	Plant Manager	IRT	ERG Leader	
Tier 1	Minor injury – First Aid treatment.	Negligible impact on fauna/flora, habitat, aquatic ecosystem or water resources. Incident reporting according to routine protocols.	Minimal impact to reputation.	Financial loss <\$50,000	Situation generally stable with some protests / Hartals against government	Incidents that are containable by the Operations' Site Incident Response Team (IRT)	Insignificant Low	Operation Sites	Plant Manager	IRT	ERG Leader	Plant Manager other IRT members ERG - as required
Tier 2	Moderate injury- Medical Treatment , Lost Time injury	Impact on fauna, flora and/or habitat but no negative effects on ecosystem, may require immediate regulator notification.	Moderate to small impact on business reputation.	Financial loss >\$50,000	Security unrest appears to escalate to regular outburst - but authorities appear to be capable of maintaining control	Incidents that require Dhaka based ERG, governmental and regulatory support	Medium High	ERG	ERG Leader	Chief Engineer BPDB activates Dhaka ERG	Inform Member-Generation	ERG Leader – Chief Engineer other ERG members ERG - activated for EHS / Security issues
Tier 3	Injury requiring ISOS activation. Permanent disabling injury and or long term off work and fatality.	Long term impact of regional significance on sensitive environmental features, likely to result in regulatory intervention/action	Significant impact on business reputation/ or international media exposure.	Financial loss greater than \$100,000.	Confirmed direct threat to foreign business interest or against expatriates Situation certain to escalate further beyond Government control	Incidents when there are multiple injuries or fatalities requiring IMT support and also international support, regulatory and public relations assistance.	High Extreme	IMT	IMT Leader activates IMT	Mmeber-Generation	Chairman-BPDB IMT	IMT other IMT members IMT - activated

1.6 Incident Command Activation

Operational Site IRT

- Operational site based incident management team personnel led by Plant Manager
- Activated to implement the Emergency Response Plan for a Tier 1 incident

Dhaka based ERG

- Dhaka based incident management team personnel (ERG) led by Chief Engineer
- Activated to respond to a Tier 2 incident

Dhaka based IMT

- Dhaka based led by Member –Generation of BPDB
- Activated to respond to a Tier 3 incident

1.7 Acronyms and Abbreviations

IRT	Incident Response Team
IMT	Incident Management Team
ERG	Emergency Response Group
ERP	Emergency Response Plan
DMB	Disaster Management Bureau
DC	District Commissioner
BWDB	Bangladesh Water Development Board
ERC	Emergency Response Center/ Emergency coordination center

2 Management Strategy

This ERP is intended to provide information, strategies and procedures relating to all aspects of emergency management which comprise:

- a. **Prevention** of emergencies,
- b. **Preparation** for emergencies.
- c. **Response** to an emergency. and
- d. **Recovery** following an emergency.

It includes emergency management procedures and administrative structures to be established and nominates functional roles and responsibilities for the management of emergencies across the infrastructure developed.

Prevention is one of the most important elements of the plan. Averting an emergency event from ever taking place is always the top priority. Effective prevention techniques such as preventative maintenance of high pressure gas mains can greatly reduce the risk of a gas leak or explosion.

Preparedness is ensuring that personnel are adequately trained and equipment is properly functioning for an effective response and recovery to an emergency event. For unexpected and unpreventable events like a terrorist attack, preparedness can be the deciding factor that prevents an isolated incident from becoming a major disaster.

Response is actions taken to minimize the effects of an emergency. An effective and quick response is important in all cases of emergency events in order to minimize casualties and injuries.

Recovery is defined as measures which are taken after an emergency event. Recovery measures include but are not limited to; support of affected individuals, damage assessment, containment, clean-up and investigation.

3 Prevention

3.1 Introduction

Prevention and mitigation activates work toward eliminating or reducing the impact of an event and increasing the resilience of an affected community to recover from the consequences of an emergency event.

Typical prevention and mitigation actions will include:

- Setting, coordinating and reviewing the emergency management policy and programs for the project assets;
- Management and monitoring of project asset conditions;
- Liaise between different response agencies and emergency managers (through the ERG);
- Review and update the risk register, taking into account any new or emerging risks to project assets;
- Seeking government funding support to mitigate identified risks.

3.2 Emergency Risk Management

Emergency planning requires an identification and assessment of the hazards likely to cause an emergency. Emergency risk management should be carried out in accordance with regional laws

and guidelines to identify and set priorities to be addressed within an emergency management program.

Emergency Risk Management focuses on reducing risk by modifying aspects of the source of the risk, the community or the environment- because it is impossible to completely prevent emergency situations from occurring.

The main benefits of emergency risk management process are:

- The process focuses on the causes of risk instead of emergencies that may result from the risk;
- The process uses tools and approaches that are common to other risk management and planning approaches, enabling appropriate prioritisation of treatments for action (e.g, such as capital works or maintenance); and,
- Provides a proper basis to access funding/grants, monitor insurance costs, and minimise opportunity for litigation and legal action.

3.3 Prevention through Mitigation Measures

Project risks are prevented through implementation of risk mitigation measures to address events such as; gas main leak/explosion, traffic accidents, structural failure and other minor structural issues (e.g., pavement). The potential risks and measures to reduce each type of risk are given in the table below.

Table 3 : Risk and Mitigation Measures

<i>Risk</i>	<i>Preventative Mitigation Measure</i>
Flooding	<ul style="list-style-type: none"> • Regular checking and maintenance of River Training Works.
Traffic Accidents (Road & Rail)	<ul style="list-style-type: none"> • Traffic Control devices (road signs and markings, speed signs, stop signs, speed bumps and safety barriers) • Infrastructure maintenance and improvements (including upgrades of road surfaces, rail lines, rail crossings, bridges and drainage) • Closing of bridge during extreme wind.
Spill/leak of Hazardous Materials in Land and Water	<ul style="list-style-type: none"> • Fire Department personnel in the ERC will possess sufficient Hazmat training and have access to an appropriate number of Hazmat suits.
Terrorist Events/Threats	<ul style="list-style-type: none"> • Regular contact and updates from National intelligence agencies regarding threats. • Random security checks at the bridge ends during threats. • Bangladesh Army and Police personnel will be appropriately resourced and trained to quickly respond to terrorist emergency events.
Gas Leak/ Explosion	<ul style="list-style-type: none"> • Regular inspection and preventative maintenance of Gas main according to the <i>Operation and Maintenance Manual</i>. • Regular checking of Gas main pressure and pressure valves.

3.4 Review of Risks

The ERG will review the risk/hazard register on bi-annually following an incident. The review will:

- Take account of any new or emerging risks that relate to emergency management and project assets. This may include consideration of:
 - Any new developments;
 - Changes in land use;
 - Hazard mapping studies; and
 - Resource availability.
- Identifying opportunities and mechanisms to treat and mitigate risks;
- Take account of new or changed risk controls; and,
- Identifying the resources required to control risks, and identify the means to attain those resources.

3.5 Review of Other ERP's

All EMP's developed by the EPC Contractor for the construction phase of the project will be monitored, reviewed and approved by the ERG in coordination with the IRT.

4 Preparedness

4.1 Resource setup- Fire detection and protection facilities

General

The BPDB Ghorashall power plants have a fire pump which is not working since long time. It is required to design, manufacture, deliver to the site, install, test and commission the fire-fighting and fire detection equipment to protect the steam & gas turbine, generating units and all associated equipment. In particular, the following shall be included:

- CO₂ Gas fire protection system for the gas turbine packaged units.
- Water hydrant system including motor & diesel engine driven pumps, jockey pump, water main, hydrant stands, hoses etc.
- Portable fire-fighting equipment

Design Requirements

The general design of the fire protection facilities shall take into account that the basic operating policy for the power station will have the minimum of personnel supervision for the gas turbines.

Where automatic systems are provided, alternative manual initiation facilities shall also be provided.

All fire protection installations shall comply with the requirements of the codes of practice of the National Fire Protection Association, Boston, Massachusetts, U.S.A., as appropriate for the respective systems, to the approval of the Engineer.

CO₂ Gas Fire Protection System

An automatic Carbon Dioxide (CO₂) gas fire protection system shall be provided in all machinery enclosures of gas turbine generating units except in the unit local control package. The fire protection system shall comply with the requirements of National Fire Code No. 12 A published by the National Fire Protection Association, Boston, Massachusetts, U.S.A. or equivalent.

The equipment shall consist essentially of fire detectors distributed strategically within the enclosures which, on sensing a dangerous condition at any location, will initiate audible and visual alarms, trip all running plant including ventilation equipment, and release CO₂ gas into the affected enclosure. Trip gas turbine generating unit and immediately shut off the fuel supplies to the unit at a point external to the enclosures. There will be time lag of 30 seconds between the ringing of alarm and discharge of CO₂ gas, so that the personnel working in the package could leave safely.

Facilities for alternative manual actuation of the fire protection system shall also be provided such that, when the manual mode has been selected the protection sequence will not proceed beyond the alarm stage without manual action by an operator.

System of lock off to (but not exit from) the enclosure affected shall also be provided.

The fire protection system shall be segregated into separate zones so that at least the protection for any one compartment can be selected to the manual mode whilst, at the same time, retaining the automatic mode for the remaining enclosures.

Lock-off boxes shall be provided at all entries to enclosures, with switches whereby an operator may inhibit automatic release of extinguishant. These boxes shall be provided with status indicators signifying 'Auto on' 'Auto-off' and 'Extinguishing Released' and a red lamp shall also be illuminated at the box in the event of extinguishing release.

The status shall be indicated at the control panel of the control building also. Fire detection shall be by means of ultra violet flame detectors with a backup system utilising rate-of-rise temperature detectors. The use of smoke detectors shall be subject to specific approval by the Engineer as regards their type and location. Audible and visual fire alarms shall be provided in all machinery enclosures, the local control cabs and in the control room of the control building. Additional audible alarms shall also be provided external to the turbine generator enclosures.

Particular areas of high fire risk such as confined spaces where lubricating oil could possibly come into contact with high temperature, surfaces shall receive special consideration. Such areas shall be treated as separate fire protection zones with detection and CO₂ gas injection facilities operating independently of the system provided for the machinery enclosure concerned. The fire protection equipment shall be complete in all respects including pipework, valves, fire detectors, nozzles, control equipment, fully charged CO₂ gas cylinders and cylinder racks.

Hydrant System

Fire hydrant of water type shall be provided in the power station. Hydrants shall be installed at required places around the gas & steam turbine generating units, HRSG, Gas station, GBC, Chemical Plant electrical building, Outdoor transformers and 420 kV switchyard. Each hydrant stand shall be fitted with an isolating valve and approved type of instantaneous hose complying 30-m hose with combined jet/water-fog nozzle shall be provided in the cabinet adjacent to each hydrant.

Fire fighting water pool/ storage tank capacity will be minimum 04 hours requirement at worst scenario of fire incidents.

Piping

The fire-fighting water mains shall consist of buried piping of at least 150 mm diameter. The underground pipework shall be provided with an approved protective coating unless the pipe is manufactured from an approved non-corrosive material.

Portable Equipment

The following portable fire-fighting equipment or equivalent shall be provided: (1) Eighty 5 kg CO₂ extinguishers (2) Twenty four 20 kg CO₂ extinguishers with trolley (3) Fifty five 5 kg Dry chemical extinguishers (4) Twenty 10 kg Dry chemical extinguishers. The portable equipment offered shall be of a type for which replacement cartridges and dry powder refills shall be readily available locally.

The total cost for the installation of fire protection and detection system (*required as explained above*) for entire of the Ghorashal power plant would be approx. \$ 2,010,000.00

4.2 Training

A professional training needs to be given to the designated fire team.

The ERG will review staff and contractor competency and identify training needs for IRT and ERG committee members, staff and/or contractors including:

- Courses and workshops- by professional ERP expertise/consultant
- Emergency event case studies;
- In-house training;
- Debriefs and shared learning with or from other emergency response organizations.

4.3 Preparedness Activities

Preparedness ensures that arrangements and resources are maintained in a state of readiness to be mobilized and deployed for response and recovery to an emergency event.

The ERG will oversee the adequacy of preparedness in case of an emergency event and will undertake the following preparedness activities:

- Review and update the EMP, any sub-plans and Response Procedures;
- Ensure all officers are aware of, and hold sufficient competency to perform their emergency management roles and responsibilities;
- Arrange training and education programs for staff, contractors and community leaders, including environmental management committee members of the resettlement site;
- Conduct exercises to test specific aspects of the EMP, and its sub-plans or procedures;
- Establishing processes for lessons learned including conducting debriefs and reviews of other emergency events or exercises that are relevant to the project;
- Maintain working relationships for emergency management and refreshing any specific response and recovery support arrangements with Councils and other agencies;
- Have supporting systems in place for response and recovery e.g., cost capture and documents and records management;
- Ensure the Emergency Response Centre is adequate, accessible and properly resourced to meet needs during an emergency; and,
- Continual review, evaluation and auditing of emergency management arrangements, identifying and promoting opportunities for improvement.

4.4 Exercises

The ERG will prepare sub-plans and procedures for the IRT on conducting test (mock) runs/exercises. The ERG will also determine the effectiveness and efficiency of emergency management arrangements and identify opportunities for improvement. Sample exercises will cover:

- Field exercises– where the scenario is created (e.g., a fire explosion or severe people injury that required immediate medivac) and emergency responders approach the scenario as though it were a real situation;
- Desktop exercise – Where the scenario is described and participants discuss their roles and can examine various aspects and alternatives. This can include testing a procedure or process.

The ERG will develop and execute an Exercise schedule. In determining what aspect of the emergency management process will be exercised, consideration will be given to:

- Any new or emerging risks;
- Those sections of the ERP that hasn't recently been tested (whether in operations or an exercise);
- Where there has been specific changes in the emergency management roles or the personnel;

If a field exercise is being planned independently of other emergency response agencies, it is especially important to advise the local emergency services of the exercise details, so the exercise does not disrupt their response to genuine emergency calls. The ERG shall conduct debriefs following the exercise to identify what worked well, and what are the opportunities for improvement.

A nominated administrative staff member at the IRT will be responsible for updating the ERP (including contact telephone numbers) and informing all plan holders of any changes. A record of plan amendments will be maintained, the plan will be updated at least annually.

Records will be maintained of all exercises and drills and will include but not limited to the following information; (i) Response times, (ii) Adequacy of responding personnel, (iii) Adequacy of equipment; and (iv) Improvements needed.

4.5 Updating the Emergency Contact List

The emergency contact information will be reviewed and updated on a regular basis. Both an electronic and hard copy of the Emergency Contact List will be maintained and readily available within the IRT and ERG. Records will be kept indicating the date each time the Emergency Contact list is updated and the electronic file location should also be kept available.

4.6 Location of Emergency Response and Support Personnel

When the ERG and Support Personnel are mobilised they will proceed immediately to the Emergency Response Centre (ERC) in order to carry out the tasks and actions required.

4.7 Meetings

The ERG will hold monthly meetings to update, coordinate and discuss emergency response procedures.

5 Response

5.1 Introduction

Response means effectively coordinating a response to an emergency event, limiting threat to life, property, and the environment. Response Covers:

- On-Site Management of the situation;
- Initial assessment and reporting of the event and location;
- Identification of communication methods;
- Coordination of resources (off-site coordination) to support the on-site management;
- Providing advice and reports of the situation to Officers higher in the chain of command;
- Ending Response actions when the situation is resolved.

The following is the procedure to be followed by the ERG Leader, when the Incident Response Leader, as a result of an incident in Remote Location, has contacted him and the ERG Leader decides that the incident requires the activation of the ERG.

5.2 Notification and Activation of the ERG

In the event of a remote location activating the Incident Response Team (IRT), the Incident Response Controller will contact the duty ERG Leader and inform him/her of the situation. The ERG Leader must be informed within 30 minutes of the activation of an IRT.

The ERG Leader is the central point of contact for the initial incident notification. Once the ERG Leader has made contact with the Incident Response Controller and has details of the incident he/she will decide whether there is a requirement for the ERG to be activated, and what the initial composition of the ERG is to be. The ERG Leader is responsible for initiating the activation and call out of the duty ERG.

5.3 Emergency Response Group

The BPDB Chief Engineer is the designated ERG Leader and advice to all incident and emergency situations for Ghorashal Unit # 4 Bangladesh, will activate and direct the emergency response group members as appropriate to the emergency. The ERG Leader will notify and liaise with the Member-Generation.

The primary responsibilities of the ERG are:

- To manage all emergency situations;
- To provide emergency support, advice and assistance to all the remote locations, assets and operations;
- To manage any emergency situation that may occur in or affect the Dhaka Office;
- To notify the Incident Management Team Leader (Member- Generation) within 30 minutes of the Emergency Response Group being mobilised and to keep them informed of the situation;
- Ensure liaison with Government, key stakeholders and local authorities in accordance with legal and legislative requirements through Country Incident Management Team Leader;

- To prepare and release media holding statement in consultation with corporate legal;
- To inform the Incident Management Team of the names and conditions of all persons involved at the emergency location;
- To communicate with all national Companies, with employees or equipment at the emergency location and notify them of the names and condition of their employees; and
- To arrange the reception and treatment for all personnel evacuated from the emergency site.

In addition, the ERG will attend to the following duties:

- Ensure appropriate representation in the IRT;
- Regular meetings of the ERG and meetings with IRT personnel;
- Regularly review and update the Emergency Risk Register;
- Initiate programs, procedures and activities to mitigate the risk to life and property within the project jurisdiction, including increasing public awareness;
- Arrange for and manage testing and exercising of the emergency plan particularly specific plans and emergency procedures;
- Seek funding support for emergency management related projects and programs;
- Ensure operational debriefs are undertaken after all major emergency events, and that a report is prepared and distributed. If refinements to the procedures are identified, they are issued and the ERP subsequently amended at review;
- Ensure that IRT members are appropriately trained and are competent in specific emergency management;
- Review the ERP on a regular basis as necessary;
- Monitor the development of and approve all subsequent EMPs developed by the EPC contractors for the operation and maintenance phase;
- Review the effectiveness of the IRT; and
- Ensure that all staff that has responsibilities within the ERG and all members of the ERG& IRT have access to ERP documentation.

The actions of the ERG will vary depending on the nature of the emergency and it is the ERG Leader's responsibility to determine the extent of the response required. The ERG may call on additional staff to assist them in responding to any emergency or incident situation.

All ERG members are required to read and familiarise themselves with this document, in particular their own respective functions, for which checklists are provided on the following sections. ERG members should ensure that they have access to this document at all times.

POSITION / ROLE	RESPONSIBLE PERSON (position)	DESIGNATED ALTERNATE (position)
Emergency Response Group Leader		
Ops / technical Coordinator		
EHS Coordinator		
HR & Service Coordinator		
Logistics Coordinator		
Public Affairs Coordinator		
Security		

POSITION / ROLE	RESPONSIBLE PERSON (position)	DESIGNATED ALTERNATE (position)
IT		

5.4 ERG and Support Team Individual Roles and Responsibilities

The primary roles and responsibilities of the Emergency Response Group members are outlined below:

Role	Responsibility
Emergency Response Group Leader	<ul style="list-style-type: none"> Responsible for managing and co-ordinating the overall response of the ERG to the emergency situation. Reports to the IMT Leader. Responsible for mobilising the ERG and support personnel. Responsible for informing and updating the IMT Leader. Responsible for compliance with the actions and procedures laid down in this document for dealing with emergency situations. Responsible for obtaining authority from the IMT Leader for the release of information to Government, key Stakeholders and Media.
Operations & Technical Co-ordinator	<ul style="list-style-type: none"> Reports to the ERG Leader and responsible to him/her for providing operational and technical information. Responsible for providing operational and technical advice, including production, drilling and subsurface, to the emergency site Responsible for all communications with the IRT Leader at the emergency site. Responsible for maintaining the information on the status boards.
Logistics and procurement Co-ordinator	<ul style="list-style-type: none"> Reports to the ERG Leader and responsible for providing and managing logistics support. Responsible for providing and co-ordinating air, marine and road transport requirements. Responsible for establishing contracts for logistic support. Provides access to contractor information on business or technology (non HR) issues. Responsible for procuring and transporting equipment, supplies and service as required by the emergency site.
Health, Safety and Environment (HSE) Co-ordinator	<ul style="list-style-type: none"> Reports to the ERG Leader and responsible for providing risk, health, safety and environmental information. Responsible for compliance with legislation and obtaining authority from ERG Leader to inform and liaise with National Government and Regulatory authorities.

Role	Responsibility
	<ul style="list-style-type: none"> • Responsible for providing OHSE advice & support and information to the ERG and the IRT at the emergency site. • Responsible for co-ordinating office security. • Responsible for advising and maintaining the emergency responses in line with the Company emergency response procedures.
Human Resources & Travel Services (HR) Co-ordinator	<ul style="list-style-type: none"> • Reports to the ERG Leader and responsible for providing information and managing all human resources matters pertaining to the emergency situation. • Responsible for arranging medical and hospital requirements including arranging meeting and transportation of casualties and medical cases to hospital. • Responsible for liaising with emergency site through the Operations & Technical Coordinator and arranging and co-ordinating evacuation. • Responsible for providing welfare support and advice to employees and their families. • Responsible for arranging temporary accommodation, transportation and assistance for personnel being evacuated from emergency site. • Responsible for co-ordinating with the Logistics Co-ordinator onward travel for personnel being evacuated. • Responsible for communication with and notifying the next of kin. • Responsible for providing information about all personnel at the emergency site to the IMT HR Co-ordinator. • Responsible for providing information to Contractor Companies about their personnel at the emergency site. • Responsible for co-ordinating the arrangements for the disposal of fatalities.
Public Affairs (PA) Co-ordinator	<ul style="list-style-type: none"> • Reports to the ERG Leader and responsible to him/her for gathering and preparing information and managing all communications with the Public and Media in line with Company policy. • Responsible for preparing the Media Holding Statement and obtaining authority from ERG Leader / IMT Leader for release. • Co-ordinates public affairs response. • Responsible for gathering information and preparing media statements to the National Media for the approval of the ERG Leader. Prepares Corporate and agrees the content of Country statements to the media. • Responsible for providing information to the Corporate PA Co-ordinator to prepare International Media releases. • Responsible for arranging and co-ordinating media conferences. May be instructed by ERG Leader to issue statements.

Role	Responsibility
Reception	<ul style="list-style-type: none"> • Reports to the OHSE Co-ordinator and responsible for managing the reception of all personnel arriving and leaving the office.

5.5 Contact Details

The OHSE Coordinator maintains and updates the emergency contact directory and distribute to the ERG members.

The duty ERG and Support Personnel are on 24-hour on call.

Although office, home and mobile telephone numbers are given in the weekly contact list, the policy is to contact ERG and Support members via their mobile number first.

It is essential that people on duty fully understand their responsibilities and can be contacted 24 hours per day, on at least one of their listed numbers, during the whole period they are on call.

ERG members are responsible for maintaining a list of contact details of the personnel they would call out to support them in the event of the ERG requiring assistance. It is their responsibility to activate, inform, and direct any support personnel they consider necessary to provide them with the appropriate level of assistance. The respective ERG members are also responsible for briefing activated support personnel about the incident and giving them direction.

5.6 Call Out and Delegation of Authority

It is the responsibility of individual members of the ERG to ensure that their emergency response function is delegated to another from the same nominated group, when they are unavailable (i.e. unable to reach the ECC within 60 minutes). They must ensure their alternate is appropriately briefed and the alternate remains within contact. The duty ERG member is responsible for advising of this change to the OHSE Coordinator, who will update and reissue the duty ERG call out list.

The OHSE Coordinator will keep a record of the duty person and produce a weekly listing that will be sent to all ERG members and to the IMT Leaders overseas.

At the end of the duty period, the ERG member must handover their duty in person thus ensuring the next on duty has acknowledged the responsibility.

5.7 Emergency Response Centre (ERC) Initial Actions

On the activation of the ERG, all the team members should immediately proceed to the Emergency Response (ERC). The first to arrive must assume the role and duties of the ERG Leader until the duty Leader arrives. A copy of this manual is to be available in the Emergency Response Centre.

The most important early action for the first persons to arrive in the Emergency Response Centre is to ensure that:

- Telephones are set up to establish and establish communications with the affected emergency location and the IRT.
- Set up PC Access
- They identify the facts of the incident and ensure that they are written up on the status boards.

These actions see **Attachment 6 and Attachment 7**. The layout of the ERC and the equipment for use during the management of an Emergency situation is shown in **Attachment 8 and Attachment 9**.

5.8 Formal Updates of Information to ERG

The ERG Leader should conduct updates to the whole ERG Group at frequent intervals throughout the duration of an incident, at least every hour in the early stages of the incident.

All available ERG members should attend updates. The individual ERG members should report and update any relevant information to Support personnel as soon, as is practicable.

A checklist for holding a Formal Update of Information is contained in **Attachment 1**.

5.9 Government, Key Stakeholders & Media Response

The Public Affair Coordinator, in consultation with ERG Leader is responsible for the preparation and early release of the Media Holding Statement see **Attachment 4**.

The ERG Leader must approve all further information for release to national and international media groups at the Corporate Office. The IMT Leader is responsible for organising the release of information to international media groups. The ERG Leader will seek this approval from IMT leader before release.

Once approval for release of information to the national Media is received, the PA Coordinator, in consultation with the ERG Leader, is responsible for arranging for the release of such information.

Prior to their release, the ERG Leader must authorise the national media statements.

The ERG Leader will, in consultation with the ERG Leader, nominate a spokesperson for interviews and conferences, which will be co-ordinated by the ERG Public Affairs Coordinator.

All personnel must be instructed to direct external telephone calls requesting media comment on any incident to the nominated ERG spokesperson.

5.10 External Notifications

There may be a requirement during an incident to notify and liaise with a number of national companies, authorities and agencies. It is important that the ERG maintains a record of all these external communications and liaises effectively to ensure overall co-ordination and to ensure they speak with one voice.

The OHSE Co-ordinator is responsible for advising the ERG Leader of the requirement for making the relevant contact and or notify to national Government and Regulatory authorities. The OHSE Coordinator is not authorized to release statements.

The HR Co-ordinator is responsible for making contact with the next of kin of all staff including contractors. The Public Affairs Coordinator is responsible for notifying the appropriate national authority regarding any fatalities.

In general, existing business channels of communication should be retained during an incident, but the ERG must retain overall responsibility and control for this communication. The range of contacts will inevitably vary greatly depending on the location of the affected site.

5.11 Public Relations and Media

In the event of an emergency, the ERG will release all media information, warning information and updates. Information to be provided may include, but not necessarily be limited to:

- Nature of the emergency event,
- Likely duration,
- Alternative routes,
- Alternative transport options, and
- Advice to delay or cancellation of planned journeys.

6 Recovery

6.1 Recovery Management

Recovery is defined as measures which support emergency affected individuals and communities in the reconstruction of physical infrastructure and restoration of emotional, economic and physical well-being.

The ERG will typically manage the following operations:

- Damage assessment and categorization;
- Provision of temporary services;
- Reinstatement of traffic signals and road signs.
- Reinstatement of environmental and workplace standards.

6.2 Cleanup

In the event of gas leak/explosion or hazardous material spill appropriate clean-up of the affected area will be conducted once the emergency has been mitigated. Appropriate measures will be taken to ensure the safety of the clean-up workers in the case of hazardous material spills.

6.3 Investigative Follow-Up

In the case of emergency events such as serious transportation accidents, gas leak/explosion, hazardous material spills and terrorist events, a thorough investigative follow-up will be conducted by the IRT and a report of the findings will be sent to the ERG.

The report may include, but is not limited to the following sections:

- Cause of emergency;
- Evaluation of response time;
- Evaluation of emergency response procedures;
- Recommendations to mitigate future such emergencies.

7 Emergency Scenarios

7.1 Kidnap and/or Extortion

While the basic ERG procedures remain much the same, kidnap and/or extortion require some different methods to address them. In some cases the information may need to be retained by a very small core team and the negotiations may take place over a protracted period of time.

The ERG is to gather and records the information available regarding the kidnap/extortion situation in line with checklist see **Attachment 2**.

Due to the extreme sensitive nature of a kidnap and/or extortion negotiation it is imperative that the ERG Leader, in consultation with ERG Leader, makes immediate contact with the IMT Leader. The IMT Leader will either take over the responsibility for the negotiations or will provide guidance to the ERG Leader.

7.2 Civil Unrest or War Threat

If civil unrest or war threat occurs or appears likely either in operating area or close to an area where operations are in progress the ERG will be required to consider and discuss the threat with the ERG Leader and the IMT leader. Refer to Emergency Response Escalation Protocol (Table 1).

The primary objective must be to safeguard and evacuate all personnel from the danger area. A plan will be drawn up identifying actions to be taken in order to safeguard personnel, their families and Company assets if the situation continues to deteriorate.

The plan of action should state what the Company considers to be the trigger points which, when reached, will require actions to commence. Once the action plan has been developed it should be

clearly communicated to those who are required to know. The following procedures provide guidelines for ERG to assess State of Alert and preparation for country evacuation.

7.3 Bomb Threat

Bomb threats have become increasingly commonplace in recent years and used by various groups that want to cause disruption of business. Although 99% of the bomb threats are hoaxes, all should be treated seriously. In all circumstances the first thing that must be done is to determine the nature of the threats to the organisation.

The ERG is to gather and record the information available regarding the Bomb Threat in line with checklist see **Attachment 13A**.

The ERG is to assess the credibility of the threat and possible consequences and devise an evacuation plan of the premises. See **Attachment 13**

7.4 Pandemic

BPDB is strongly committed to ensure that its essential operations are maintained during local flu pandemic declaration by Health ministry, Bangladesh

BPDB objectives during an International and Nationally declared pandemic are the following:

- Raise awareness amongst the BPDB personnel and subcontractors about potential threat of pandemic
- Producing action plans that are specific to each of BPDB operations location, taking into account local healthcare provision and regulatory systems
- Enhanced protection for high-risk and vulnerable employees
- Minimize social disruptions and the economic impact of a pandemic to BPDB operations

It is therefore appropriate that a business continuity plan be developed for the benefit of the health and welfare of BPDB employees, sub-contractors and their families.

7.5 Installation Loss or Significant Business Loss

A situation may occur, for example a loss of key equipment, which could result in a significant delay in bringing a field into operation, or the shutdown of a field or installation as the result of an incident. Such a situation will inevitably result in a significant loss of business and therefore loss of revenue to the Company unless it is addressed immediately.

Such a situation will require the ERG to consider what actions have to be taken immediately, and by whom, in order to avoid or minimise loss to the Company (Refer to Emergency Response Escalation Protocol, Table 1.1).

7.6 Spills of flammable liquids (Pollution Incident)

A pollution incident can refer to a number of different types of pollution. They can be broadly categorised as:

- Oil spill onto the land.
- Flammable liquids /Chemical spill onto the land

- Smoke or fumes into the atmosphere.

It is the responsibility of the ERG to ensure that:

- The source of the pollution is quickly identified and stopped
- That specialist clean up contractors is mobilised as quickly as possible
- That the appropriate authorities and agencies are notified.

The ERG has to also consider that any pollution type wherever it may occur can result in significant media and environmental group interest. The ERG Leader must be prepared to consider and address the issues that the media or environmental groups may raise with the Company. Failure to take this seriously can result in public concern, loss of shareholder confidence, and possible disruption to business and the associated loss of revenue.

7.7 Fire and Explosion Emergency Preparedness Planning

Critical to employee safety is fire and explosion emergency preparation planning. The effectiveness of response during emergencies depends on the amount of planning, training, and drilling previously performed.

Identifying key elements of a fire and explosion emergency preparation plan starts with the development of a written plan. The written emergency preparedness plan should be provided to all departments and be accessible to all employees. Department managers and supervisors should be familiar with all elements in the written plan and have conducted training/drilling to assure that their department employees clearly understand their roles in fire and explosion emergencies.

Guide

7.7.1. Fire and Explosion Emergency Plan:

- a. The facility information describes key elements of the facility that is useful for new employees and response agencies, such as local fire departments.
- b. Employees must know how to report an emergency. This may include the activation of pull alarms or notifying the facility security center. Consideration must be given to methods of notifying local agencies such as the fire department.
- c. Alarms and signals to alert employees must be identified; this may include audio alarms, highly visible lights, and/or a public address system. Management and employees must know what actions to take when an emergency alarm is activated.
- d. All emergency phone numbers should be identified, listed in the emergency preparedness plan, and posted. Emergency phone numbers should include any facility numbers, local agencies, and any emergency-facility personnel. Consideration should also be given to recovery of operations.
- e. All responsibilities should be clearly defined for management and employees. Management must determine its strategy for responding to fire

emergencies.

- f. A chain of command should be maintained to minimize any confusion. Personnel must be identified to coordinate the emergency-response actions.
- g. Detection and alarm systems should be identified and described. Testing and preventative maintenance procedures should be included.
- h. Diagrams should be developed for critical information. Evacuation routes, exit doors, fire extinguishers, and other critical elements should be visually displayed for all employees. If the fire sprinkler system or fire suppression system is used, all critical controls/valves should be clearly identified.
- i. Assembly areas should be established for all employees. Accounting for employees can be performed at assembly areas. All assembly areas should be established at safe distances from fire hazards and clear of emergency vehicle traffic and activities.
- j. Search and rescue procedures must be established. Only trained and authorized personnel should attempt search and rescue.
- k. Procedures for shutting down equipment during emergencies should be established. Equipment operators must know the proper actions to take during an emergency.
- l. Recovery strategy should include plans to restore the operations. This should include a list of contractors who can provide equipment and services for operations. Additional consideration should be given to temporary contractors who can provide manufacturing services.

7.7.2. Employees must know the emergency routes in their work areas and be familiar with the plant layout. All employees must receive a guided tour of evacuation routes and emergency exits during orientation.

7.7.3. Operators must know their specific procedures when an emergency arises. Safe shutdown procedures for equipment should be established to prevent equipment damage and additional hazards. Evacuating employees to a safe location is a top priority.

7.7.4. The alarm system to notify employees of emergencies and evacuations must be clearly recognizable during emergency conditions. Horns, sirens, public announcement system and other alarm devices must alert employees of an emergency.

7.7.5. All alarm systems and fire protection systems must be maintained and tested on a regular basis. It is recommended that alarms be tested monthly.

- 7.7.6. The emergency preparedness plan should be a working document used for training and practice. The plan must be updated to reflect any changes in the workplace.
- 7.7.7. Emergency routes and exit doors should be clearly posted on a wall diagram to show employees the primary and secondary emergency routes for evacuating the building. The diagram should show the employee's current position and emergency routes. Each department should display this diagram in a highly visible area.
- 7.7.8. Emergency evacuation drills must be conducted to ensure employees are knowledgeable and trained on emergency plans.

Reference Options

BPDB Ghorashal facility ERG leader and IRT leader must decide on the extent of employee involvement in response to a fire and explosion emergency, and decide whether or not the facility should have a fire brigade.

- **Full evacuation of the facility:** No employees are permitted to fight a fire -- they are to immediately evacuate upon notification by an alarm or other device. This option provides the most employee protection; local fire department will handle to manage and control the emergency.
- **All employees must be trained to utilize fire extinguishers for incipient fires:** Initial training should be conducted when the employee is hired and refresher training provided annually. This alternative provides the opportunity to prevent a small incipient fire from becoming a larger one. Employees must clearly understand their limits when this option is selected. There is risk associated with an employee attempting to extinguish a fire that has passed the point of being an incipient one. Employees may sustain injuries if they are not properly trained.
- **Designated employees to fight an incipient fire in their general areas:** With this option, only designated employees are trained and expected to fight an incipient fire. Additionally, the method of training must be hands-on.
- **Organized fire brigade to fight incipient stage fires only:** If this is the choice, the following are required: (i) specific procedures, training, and leadership structure; and (ii) all necessary protective clothing and fire-fighting equipment. Training and education in special hazards must be provided, along with training in standard operating procedures and use of equipment. A higher, specialized level of training should be provided for the brigade leaders and instructors. This option poses a risk of injury to fire brigade members.
- **Organized fire brigade to fight both incipient stage and interior structural fires:** If it is decided that the fire brigade should fight both incipient stage AND interior structural fires, training and education in special hazards must be provided. In addition, brigade members must pass a physical examination, attend educational sessions at least quarterly - with hands-on training at least annually - and have protective clothing and breathing apparatus provided. This selection, the equivalent of a professional fire department, poses the highest risk of injury for brigade members. As such, only properly-trained brigades should assume this role. The fire

brigade should help evacuate all personnel not involved in handling the emergency and be able to assist the fire department to control the emergency.

Training

The purpose of training is to establish and verify the organization's ability to prevent fires and to effectively respond to fire emergencies. Training considerations should include the following:

- Action to take in the event of a fire
- Portable fire extinguishers
- Familiarity with plant
- Operations and maintenance of equipment
- Alarms
- Hot work permits
- Handling of flammable liquids
- As a minimum, all employees should receive training in the following areas:
 1. **Actions to take in the event of a fire:** When to evacuate, when to attempt to extinguish a fire, whom to notify, what equipment to shut down.
 2. **Portable fire extinguishers:** The correct extinguisher and its proper operation on a particular type of fire (e.g., metals, electrical, chemical, wood, or paper). The training should be "hands-on" to give employees experience in extinguishment techniques.
 3. **Familiarity with plant:** A tour of the entire facility, with emphasis on the location of exits, fire extinguishers, hazardous operations, and restricted areas.
 4. **Care and maintenance of equipment or machinery they will be operating:** To reduce fire loss potential by helping to keep equipment from malfunctioning or breaking down.
 5. **Alarms:** The meaning of various alarms and the actions to take when they are sounded.
 6. **Hot-Work Permits:** How to protect against fire hazards caused from welding/cutting/brazing and other hot work.
 7. **Flammable Liquids:** How to safely handle, use, and store flammable liquids.
- In addition, certain functions, such as the following, will require specific training for the employees involved:
 1. **Fire Brigade:** If the facility has a fire brigade, members should be required to complete a specified training program.
 2. **Specialized Equipment:** Some processes or machinery operations present fire loss exposures by their very nature; e.g., chemical handling or mixing. Employees involved must be thoroughly trained in the fire exposures and control measures to be followed.

3. **Job Change:** Training employees when they change jobs is important as new jobs present new exposures.
4. **Traffic Control:** During a fire or explosion emergency, persons with essential duties must be able to move to locations where they are needed. In addition, it is usually necessary to evacuate occupants quickly.

Drills

Planning for fire emergencies requires drilling. Fire drills must be conducted to test the organization's abilities and readiness to handle a fire emergency. One of the most important elements in fire protection -- EVACUATION of employees - can be tested.

Planned and unannounced drills should be conducted, each one serving its own purpose. Planned drills focus attention on inspections and training while unannounced ones truly test the organization's response.

When employees are assembled, the line manager of each area should account for all personnel under his/her supervision. If any employees are missing, immediately report their names to the plant EHS Coordinator so that search and rescue efforts can be initiated. Only trained search and rescue personnel with adequate protective equipment should be permitted to re-enter an evacuated area.

After each drill, a meeting of the responsible managers should be held to evaluate its success and to discuss any problems that may have occurred.

7.8 Preparing for an Electrical Power Outage

This section describes the issue of business exposure to electric utility service outages. It surveys a range of approaches to reduce those exposures or ease their impact. These include contractual answers, such as service interruption insurance, and physical answers, such as installed back-up power supply equipment.

Service Interruption Insurance

First party loss arising from electrical power outage is addressed under an insurance coverage. This coverage is generally only available for losses that result from sudden physical damage to utility equipment.

Maintaining Reliability

Here are five types of physical answers to the problem of electrical outage exposure:

- Additional utility line
- Uninterruptible power supply (UPS)
- Emergency generator
- Distributed power equipment/cogeneration
- Electrical equipment maintenance

Additional Utility Line

A second incoming power line can provide a dramatic increase in reliability. Additional power lines need to be negotiated with the supplying utility and will require additional distribution equipment within the plant or facility. The cost of a second power line can be substantial and will depend on the amount of equipment the utility and the user need to install.

Uninterruptible Power Supply (UPS)

An Uninterruptible Power Supply (UPS) is becoming a standard part of computer system infrastructure requirements. If data centers lose power unexpectedly, the resultant crash can cause expensive losses of data and functionality. UPS systems are generally designed to shield computer installations from short-term dips and spikes in the power supply. In the event of an extended outage, a UPS system is intended to provide for an orderly shutting down of the computer center, including saving data. UPS systems are not generally designed to maintain power during extended power outages. UPS systems serve several important functions, and should continue to be used even if other physical solutions to outage exposures are implemented. UPS systems should be considered for all mission critical equipment and not just major data centers.

Emergency Generator

Emergency electric generators provide a means to maintain some portion of the electric power load for an indefinite time during a utility outage. Most back-up generators are powered by internal combustion engines, and fueled by gasoline, diesel fuel or natural gas. Units can be set to power up automatically in the event of an outage or may require manual starting. Units are typically sized to support a scaled-down electrical load that is well below the normal 100 percent electrical demand. Back-up generator units should be started up and maintained on a regular schedule to minimize the chance of failure when needed.

Distributed Power Equipment/Cogeneration

Distributed power and cogeneration units are also on-site generating systems. The difference between these units and an emergency or back-up power generator is that they are intended to be run regularly, not just during utility outages. They may be operated continuously or they may be operated during hours of peak demand or peak electrical cost, to minimize electrical cost.

Gasoline and diesel engines are unlikely to be used for this service because of fuel storage limitations, but natural gas fueled engines may be used. Also, natural gas fueled turbines are widely used for these applications. Gas turbines come in an increasingly wide range of sizes, from utility grade power producers to remarkably compact "micro-turbines." An emerging technology in this area is fuel cells, which are just beginning to be commercialized for distributed power applications.

The term "cogeneration" generally refers to cases where the heat from any of these units is used to provide heating or hot water to the facility. Where feasible, this approach improves the economics of installing the power generating equipment.

Electrical Equipment Maintenance

All of the physical answers noted above involve adding new equipment and changing the electrical configuration of a location to provide backup capacity of one kind or another. An equally important, and much less expensive, physical answer is to make sure the existing electrical distribution equipment is properly maintained. Preventable failure of on-site electrical distribution equipment can and does cause many power outages.

7.9 Flood Contingency Plan

During the monsoon period in Bangladesh, there is considerable flooding of major rivers and waterways. These floods can be serious enough to threaten the Company's operations and this contingency plan has been developed to ensure that an effective planned response can be made. This plan covers all areas of operations and considers the required interfaces with BPDB's contractors, Government Bodies and other relevant organisations.

The following flood 'critical' areas, which would significantly affect the Company's Operations, have been identified as:

- Communications

- Travel in and out of the country
- Transportation
- Power supplies
- Gas supplies
- Water supplies
- Food supplies
- Health problems
- Availability of funds
- Protection of equipment and records
- Security
- Sewage systems

For the purpose of identifying the stages at which precautions and measures are to be taken, the alert stages have been colour coded as follows:

GREEN - ALERT will take effect when adverse weather conditions have been reported, which may cause an increase of water in the major rivers or waterways giving rise to localised flooding.

AMBER – ALERT will take effect when there has been a significant increase in flooding of immediate or surrounding areas of Gorashal Power Plant, office or accommodation to the extent that non-essential personnel will be required to move to safer locations.

RED - ALERT will take effect when, due to deteriorating conditions, either power supplies, communications, sewage systems have failed or security and health problems have become a major concern, and all personnel will be required to move to safer locations.

General Actions

The ERG leader is the person that initially mobilises the ERG members and liaises with the Member-Generation regarding the situation status and possible escalation.

Situation Monitoring

The ERG is responsible for the collection and review of information regarding the flood situation in and around the BPDB Gorashal Plant areas and other facilities. They will as a minimum:

- Gather and review situation reports from media, government agencies and any other appropriate source.
- Meet at a pre-determined frequency (depending on the stage of alert) to review the information obtained.
- Act on information obtained to ensure that the relevant contingencies are implemented.
- Liaise with government agencies regarding their specific emergency contingency plans.
- Ensure that all personnel are registered with their individual country embassies.
- Maintain communications with contractors.

- Compile a 'Situation Report' and distribute copies to a pre-determined distribution list.
- Liaise with medical health bodies to monitor possible health problems.

Actions for Specific Response Stages

GREEN - ALERT

ERG Dhaka
<ul style="list-style-type: none"> • Contact operational sites and ascertain their current situation. • Maintain contact with the operational sites and contractors • Contact main contractors and advise them of the situation <ul style="list-style-type: none"> ✓ List 'Point of Contact' with contractors. ✓ Ascertain form contractors their status with regard to preparedness ✓ Maintain list of contractor personnel movements in and out of the country. ✓ Identify developments within the Contractors organisations with regard to the situation • Gather flood related information from outside sources i.e. TV, Newspapers etc., • Develop and distribute situation up-date reports to Remote Locations. • Liaise with medical health professionals as to the perceived and current health situation in the effected areas. • Ensure that the appropriate emergency equipment is available if and when required. • Ensure that all vehicles are equipped with the relevant flood protection devices, exhaust extensions etc. • Maintain a list of vehicles that would be available during a flood situation. • Identify local national employees that have not been vaccinated against Typhoid • Vaccination programme to include any affected location based contractors • Arrange vaccinations where and when required • Ensure that the transfer of sufficient funds for the purchase of any flood related equipment, services etc has been undertaken.
Ghorashal Location IRT
<ul style="list-style-type: none"> • Contact the ERG Leader and inform him of the present situation at site. • Monitor flood levels in and around the location area on a daily basis. • Continue with daily up-dates to the ERG. • Identify requirements if situation starts to deteriorate, equipment, supplies etc. • Identify modes of transport for the evacuation of personnel • Assess security requirements.

AMBER – ALERT

IMT Dhaka
<ul style="list-style-type: none">• Instruct the ERG to instigate Amber Alert status.• Inform the BPDB Chairman that the ERG has instigated Amber Alert status.• Formally suspend/restrict personnel movements into the country.• Increase frequency of ERG meetings to twice daily.
ERG Dhaka
<ul style="list-style-type: none">• Contact the operational sites and ascertain their current situation with regard to flooding.• Maintain contact with the operational site on a daily basis and report to the ERG as to the ongoing situation.• Contact main contractors and advise them that the situation has deteriorated and that Amber Alert status has been instigated.• Compile a list of all essential and non-essential personnel with a view to evacuation/de-mobilisation, submit to Member-Generation.• Identify alternative modes of transport for the evacuation of personnel.• Develop and distribute situation up-date reports.• Liaise with medical health professionals as to the perceived and current health situation in the effected areas.• Ensure that preventative medical supplies are available for issue to all employees.• If required, mobilise Field Doctors (while on field break).• Instigate a residence and office flood-monitoring programme. Include results in daily situation up-dates.• Monitor security in and around company premises, increase security• Submit a list of all non-national employees to the Member- Generation• Ensure that the appropriate emergency equipment is distributed to relevant premises.• Ensure that all vehicles are equipped with flood protection devices, exhaust extensions etc.• Maintain a list of vehicles that are available for transportation of personnel.• Arrange a shuttle service for personnel to and from the company premises.• Monitor flood height and be prepared to move vulnerable equipment and records to a place of safety.• Ensure that food stocks are increased and maintained to a level that will give a minimum of a 7-day contingency at all relevant company premises.• Maintain sufficient drinking water supplies.• Make investigations/flight bookings for non-essential personnel• Ensure that the transfer of sufficient funds for the purchase of any flood related equipment, services etc has been undertaken.• Assign signatory for Flood related AER's
Ghorashal location IRT
<ul style="list-style-type: none">• Monitor flood levels in and around the location area on a daily basis.• Continue with daily up-dates to the ERG Leader.• Mobilise relevant emergency equipment, supplies etc.• Maintain list of personnel and update all changes.

RED - ALERT

IMT Dhaka
<ul style="list-style-type: none">• Instruct the Emergency Response Team (ERT) to instigate Red Alert status• Inform Chairman BPDB and relevant stakeholders that the ERG has instigated Red Alert status.• Increase frequency of ERG meetings to twice daily.• Contact relevant government agencies to arrange for evacuation of all personnel, families etc.
ERG Dhaka
<ul style="list-style-type: none">• Contact main contractors and advise them that the situation has deteriorated and that Red Alert status has been instigated.• Ensure that relevant funds are released for the evacuation process.• Initiate demobilization of non-essential personnel, equipment and materials as necessary.• Maintain list of contractor personnel leaving the country• Submit a list of demobilised personnel to Member- Generation.• Ensure that transportation is available for the evacuation of non-essential personnel.• Maintain a list of vehicle movements during the evacuation period.• Arrange for Ghorashal premises to be adequately protected/secured e.g. increase security measures• Move vulnerable equipment and records to a place of safety.• Ensure that all contractors held records appertaining to Ghorashal operations are secured.• Maintain a list of premises have been evacuated and as to their security status
Ghorashal Location IRT
<ul style="list-style-type: none">• Monitor flood levels in and around the location area on a daily basis.• Continue with daily up-dates to the ERG Leader.• Mobilise relevant emergency equipment, supplies etc.• Maintain list of personnel and update all changes.• Put on stand-by transport for the evacuation of personnel.• Increase identified security requirements.

7.10 Tornado Emergency

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. It is spawned by a thunderstorm and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly.

Tornado Facts

- The best protection during a tornado is in an interior room on the lowest level of a building, preferably a basement or storm cellar.

- Tornadoes strike with incredible velocity. Wind speeds may approach 300 miles per hour. These winds can uproot trees and structures and turn harmless objects into deadly missiles, all in a matter of seconds.
- Injuries or deaths related to tornadoes most often occur when buildings collapse, people are hit by flying objects or are caught trying to escape the tornado in a car.
- Tornadoes are most destructive when they touch ground. Normally a tornado will stay on the ground for no more than 20 minutes; however, one tornado can touch ground several times in different areas.
- Tornadoes can occur in any part of Bangladesh includes Ghorashal Power plant areas.

Know the signs of a tornado

Weather forecasting is not perfect and some tornadoes occur without warning. There is no substitute for staying alert to the sky. Besides an obviously visible tornado, here are some things to look and listen for:

- Strong, persistent rotation in the cloud base.
- Whirling dust or debris on the ground under a cloud base -tornadoes sometimes have no funnel!
- Hail or heavy rain followed by either dead calm or a fast, intense wind shift. Many tornadoes are wrapped in heavy precipitation and can't be seen.
- Day or night - Loud, continuous roar or rumble, this doesn't fade in a few seconds like thunder.
- Night - Small, bright, blue-green to white flashes at ground level near a thunderstorm (as opposed to silvery lightning up in the clouds). These mean power lines are being snapped by very strong wind, maybe a tornado.
- Night - Persistent lowering from the cloud base, illuminated or silhouetted by lightning - especially if it is on the ground or there is a blue-green-white power flash underneath

Before A Tornado

Prevention and practice - At work, have a tornado plan in place as of below safety tips consideration:

- Know where you can take shelter in a matter of seconds.
- Store emergency supplies (water, non-perishable, ready-to-eat food, first aid kit, tools, portable radio, flashlight, fresh batteries, blanket, warm jacket, and fire extinguisher) in a secure place at work.
- Be familiar with the weather service alert and siren system
- Practice a tornado drill at least once a year.
- Have a pre-determined place to meet after a disaster.
- Flying debris is the greatest danger in tornadoes; so store protective coverings (e.g., mattress, sleeping bags, thick blankets, etc) in or next to shelter space, ready to use on a few seconds' notice.
- When a tornado watch is issued, think about the drill and check to make sure all the safety supplies are handy. Turn on local TV and radio and stay alert for warnings.
- Develop an emergency communication plan.

During A Tornado

If at work:

- Go to the basement or to an inside hallway at the lowest level.
- Avoid places with wide-span roofs such as auditoriums, cafeterias etc.

- Get under a piece of sturdy furniture such as a workbench or heavy table or desk and hold on to it.
- Use arms to protect head and neck.

If outdoors:

- If possible, get inside a building.
- If shelter is not available or there is no time to get indoors, lie in a ditch or low-lying area or crouch near a strong building. Be aware of the potential for flooding.
- Use arms to protect head and neck.

If at home:

- Go at once to the basement, storm cellar, or the lowest level of the building.
- If there is no basement, go to an inner hallway or a small inner room without windows, such as a bathroom or closet.
- Get away from windows.
- Go to the center of the room and:
- Stay away from corners because they tend to attract debris.
- Get under a piece of sturdy furniture such as a workbench or heavy table and hold on to it.
- Use arms to protect head and neck.

If in a car, NEVER:

- Try to outride a tornado in a car or truck. Tornadoes can change direction quickly and can lift up a car or truck and toss it through the air.
- Get out of the car immediately and take shelter in a nearby building.
- If there is no time to get indoors, get out of the car and lie in a ditch or low-lying area away from the vehicle. Be aware of the potential for flooding.

After A Tornado

Help injured or trapped persons.

Give first aid when appropriate. Don't try to move the seriously injured unless they are in immediate danger of further injury. Call for help.

- Turn on radio or television to get the latest emergency information.
- Stay out of damaged buildings.
- Clean up spilled medicines, bleaches or gasoline or other flammable liquids immediately. Leave the building if you smell gas or chemical fumes.
- Take pictures of the damage - both to the house and its contents - for insurance purposes.

Inspecting Utilities

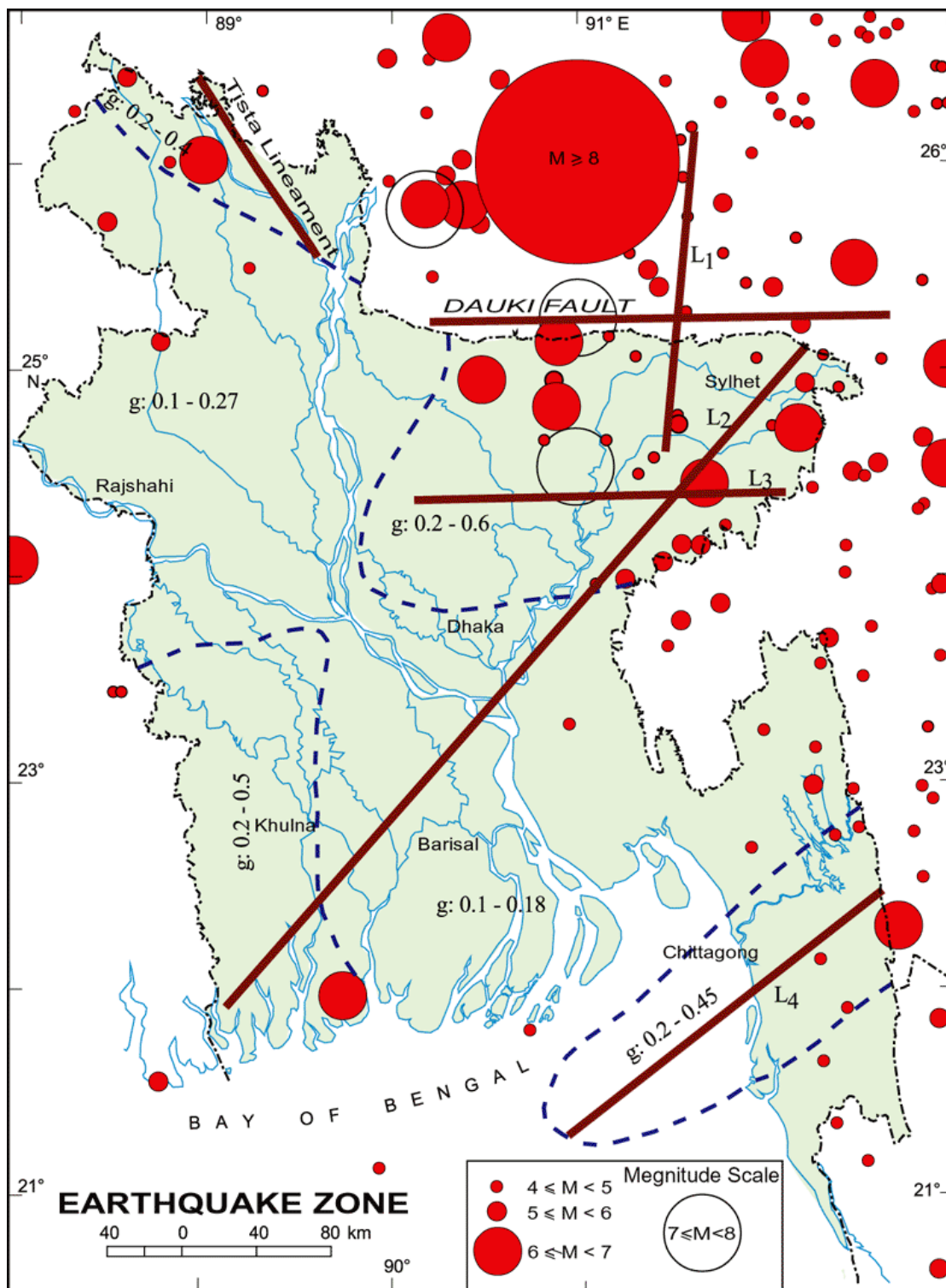
Look for electrical system damage - If see sparks or broken or frayed wires, or if smell hot insulation, turn off the electricity at the main fuse box or circuit breaker and call an electrician first for advice.

Check for sewage and water lines damage - If suspect sewage lines are damaged, avoid using the toilets and call a plumber. If water pipes are damaged, contact the water company and avoid using water from the tap.

7.11 Earthquakes Emergency

Earthquake is a sudden movement of the earth's crust caused by the release of stress accumulated along plate boundary, geologic faults or by volcanic activities. In the immediate outside of the eastern frontier of Bangladesh, Eurasian and Indian Plate boundary exist while within the country, three major fault lines, viz, Madhupur fault, Dauki fault and Eastern Plate boundary fault are located. In the last two hundred and fifty years, Bangladesh has experienced eight major strong ground motion (magnitude over 7.0), of which, epicenter of two earthquakes (Srimongal Earthquake of 1918, and Bengal Earthquake of 1885) were located within the country. Due to the existences of geological plate boundary and fault lines, occurrences of historical damaging earthquakes in and around the country and long-term silences of happening potential earthquake (seismic-gap) across the region, possibility of occurring strong earthquake is increasing over the time period.

Since it is not possible to predict earthquake, awareness (what to do) with regard to this devastating phenomena can save the live and livelihood to a great extent of the dwellers living at risk. It is said that earthquake don't kill the people, structural and nonstructural elements (buildings, life lines, household fixtures etc.). Taking care of the structural and nonstructural elements, earthquake vulnerability can be reduced a lot.



Bangladesh Earthquake Zone

Dangers Associated with Earthquakes

The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Most casualties result from falling objects and debris or collapsing structures. Injuries are commonly caused by:

- Partial building collapse, such as falling masonry, collapsing walls, falling ceiling plaster, etc.
- Flying glass from broken windows.
- Overturned bookcases, filing cabinets, fixtures, furniture, office machines and appliances.
- Fires, broken gas lines, etc. These dangers may be aggravated by lack of water due to broken mains.
- Fallen power lines.
- Inappropriate actions resulting from panic.

What to do before, during and After an Earthquake

What to Do Before an Earthquake

Although there are no guarantees of safety during an earthquake, identifying potential hazards

ahead of time and advance planning can save lives and significantly reduce injuries and property damage. Repairing deep plaster cracks in ceilings and foundations, anchoring overhead lighting fixtures to the ceiling, and following local seismic building standards, will help reduce the impact of earthquakes. Table 1 shows six ways to Plan Ahead.

What to Do During an Earthquake

Stay as safe as possible during an earthquake. Be aware that some earthquakes are actually foreshocks and a larger earthquake might occur. Minimize your movements to a few steps to a nearby safe place and stay indoors until the shaking has stopped and you are sure exiting is safe. Table 2 shows what to do during earthquake. Table 2 shows what to do during earthquake in different situation.

Action after Earthquake Disaster

Post earthquake quick damage inspection of buildings is the first essential step immediately after a major earthquake disaster to mitigate the secondary disaster caused by aftershocks. The purpose of this inspection is to quickly inspect and judge the risk of collapse of damaged buildings or falling of building components due to after shocks and to inform the habitants about the safety of their houses as soon as possible to prevent secondary disaster due to aftershocks. The result of quick inspection also provides the basic information to estimate the number of temporary houses and refuge centers necessary for the displaced people. Table 3 shows what to do after earthquake.

Table 1: Six Ways to Plan Ahead

<p>Step 1: Check for Hazards in the Home</p>	<ul style="list-style-type: none"> ▪ Fasten shelves securely to walls. ▪ Place large or heavy objects on lower shelves. ▪ Store breakable items such as bottled foods, glass, and china in low, closed cabinets with latches. ▪ Hang heavy items such as pictures and mirrors away from beds, couches, and anywhere people sit. ▪ Brace overhead light fixtures. ▪ Repair defective electrical wiring and leak y gas connections. These are potential fire risks. ▪ Secure a water heater by strapping it to the wall studs and bolting it to the floor. ▪ Repair any deep cracks in ceilings or foundations. Get expert advice if there are signs of structural defects. ▪ Store weed killers, pesticides, and flammable products securely in closed cabinets with latches and on bottom shelves.
<p>Step 2: Identify Safe Places Indoors and Outdoors</p>	<ul style="list-style-type: none"> ▪ Under sturdy furniture such as a heavy desk or table. ▪ Against an inside wall. ▪ Away from where glass could shatter around windows, mirrors, pictures, or where heavy bookcases or other heavy furniture could fall over. ▪ In the open, away from buildings, trees, and telephone and electrical lines, overpasses, or elevated expressways. ▪ Interior columns and beams, which can serve as safe zones.
<p>Step 3: Educate Yourself</p>	<ul style="list-style-type: none"> ▪ Hang emergency telephone number (Police- helpline: 999, DMP-7124000, Fire Station-Control room: 01713038181, 955555, 9556667, and Hospital: 8626812, 8626823, 86266812) at a suitable position at your house. ▪ Teach other member (children for home) how and when to call police, fire department and other emergency agency. ▪ Teach other members how and when to turn off gas, electricity, and water. ▪ Identify escape routes within the building.
<p>Step 4: Have Disaster Supplies on Hand</p>	<ul style="list-style-type: none"> ▪ Drinking water (minimum one gallon per person per day) ▪ First aid supplies, medications, essential hygiene items (soap, toothpaste, and toilet paper) ▪ Emergency lighting-light sticks, a working flashlight, extra batteries and light bulbs ▪ Radio, hand-cranked or battery-operated (spare batteries) ▪ Canned/packaged foods-cooking utensils ▪ Heavy-duty plastic bags for waste and to serve other uses, e.g. tarps and rain ponchos, warm clothing, sturdy shoes, extra socks ▪ Pet food, water, pet restraints ▪ Copies of vital documents (e.g., insurance policies, personal identification) ▪ Remember: Replace perishable items like water, food, medications, and batteries on a yearly basis.
<p>Step 5: Develop and Emergency Communication</p>	<ul style="list-style-type: none"> ▪ Emergency contact directory update and circulate to all staff on monthly basis

Plan	
Step 6: Help Staff Get Ready	<ul style="list-style-type: none"> ▪ Numbers of local emergency services offices (fire stations, police stations and hospitals) communicate to staff ▪ Conduct a monthly series on locating hazards in the office/home. ▪ Provide tips on conducting earthquake drills quarterly.

Table 2: What to Do During an Earthquake

If indoors	<ul style="list-style-type: none"> ▪ DROP to the ground; take COVER by getting under a desk table or other piece of furniture; and HOLD ON until the shaking stops. If there isn't a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building. ▪ Stay away from glass, windows, outside doors and walls, and anything that could fall, such as lighting fixtures or furniture. ▪ Stay in bed if you are there when the earthquake strikes. Hold on and protect your head with a pillow, unless you are under a heavy light fixture that could fall. In that case, move to the nearest safe place. ▪ Use a doorway for shelter only if it is in close proximity to you and if you know it is a strongly supported, load-bearing doorway. ▪ Stay inside until shaking stops and it is safe to go outside. Research has shown that most injuries occur when people inside buildings attempt to move to a different location inside the building or try to leave. ▪ Be aware that the electricity may go out or the sprinkler systems or fire alarms may turn on.
If outdoors	<ul style="list-style-type: none"> ▪ Stay there. ▪ Move away from buildings, streetlights, and utility wires. ▪ Once in the open, stay there until the shaking stops. The greatest danger exists directly outside buildings, at exits, and alongside exterior walls. Ground movement during an earthquake is seldom the direct cause of death or injury. Most earthquake-related casualties result from collapsing walls, flying glass, and falling objects.
If in a moving vehicle	<ul style="list-style-type: none"> ▪ Stop as quickly as safety permits and stay in the vehicle. Avoid stopping near or under buildings, trees, overpasses, and utility wires. ▪ Proceed cautiously once the earthquake has stopped. Avoid roads, bridges, or ramps that might have been damaged by the earthquake.
If trapped under debris	<ul style="list-style-type: none"> ▪ Do not light a match. ▪ Do not move about or kick up dust. ▪ Cover your mouth with a handkerchief or clothing. ▪ Tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available.

	Shout only as a last resort. Shouting can cause you to inhale dangerous amounts of dust.
In a stadium or theater	<ul style="list-style-type: none"> Stay at your seat and protect your head and neck with your arms. Don't try to leave until the shaking is over. Then walk out slowly watching for anything that could fall in the aftershocks.
In a high-rise	<ul style="list-style-type: none"> Drop, cover, and hold on. Avoid windows and other hazards. Do not use elevators. Do not be surprised if sprinkler systems or fire alarms activate.
In bed	<ul style="list-style-type: none"> If you are in bed, hold on and stay there, protecting your head with a pillow. You are less likely to be injured staying where you are. Broken glass on the floor has caused injury to those who have rolled to the floor or tried to get to doorways.



Table 3: What to Do After an Earthquake

Check yourself	<ul style="list-style-type: none"> Check yourself for injuries. Often people tend to others without checking their own injuries. You will be better able to care for others if you are not injured or if you have received first aid for your injuries.
-----------------------	--

Check for injuries	<ul style="list-style-type: none"> ▪ Check your first aid kit or the front pages of your telephone book for detailed instructions on first aid measures. ▪ If a person is bleeding, put direct pressure on the wound. Use clean gauze or cloth, if available. ▪ If a person is not breathing, administer rescue breathing. ▪ If a person has no pulse, begin CPR (cardiopulmonary resuscitation). ▪ Do not move seriously injured persons unless they are in immediate danger of further injury. Cover injured persons with blankets or additional clothing to keep them warm. ▪ Get medical help for serious injuries. ▪ Carefully check children or others needing special assistance.
Check for damage	<ul style="list-style-type: none"> ▪ FIRE. If possible, put out small fires in your home or neighborhood immediately. Call for help, but don't wait for the fire department. ▪ GAS LEAKS. Shut off the main gas valve only if you suspect a leak because of broken pipes or the odor or sound of leaking natural gas. ▪ Don't turn it back on yourself — wait for the gas company to check for leaks. The phone book has detailed information on this topic. ▪ DAMAGED ELECTRICAL WIRING. Shut off power at the main breaker switch if there is any damage to your house wiring. Leave the power off until the damage is repaired. ▪ BROKEN LIGHTS AND APPLIANCES. Unplug these as they could start fires when electricity is restored. ▪ DOWNED POWER LINES. If you see downed power lines, consider them energized and stay well away from them. Keep others away from them also. Never touch downed power lines or any objects in contact with them. ▪ FALLEN ITEMS. Beware of items tumbling off shelves when you open the doors of closets and cupboards. ▪ SPILLS. Use extreme caution. Clean up any spilled medicines, drugs, or other non-toxic substances. Potentially harmful materials such as bleach, lye, garden chemicals, and gasoline or other petroleum products should be isolated or covered with an absorbent such as dirt or cat litter. When in doubt, leave your home. ▪ DAMAGED MASONRY. Stay away from chimneys and walls made of brick or block. They may be weakened and could topple during aftershocks. Don't use a fireplace with a damaged chimney. It could start a fire or let poisonous gases into your home.
Aftershocks	<p>Expect aftershocks. Each time you feel one, drop, cover, and hold on! Aftershocks frequently occur minutes, days, weeks, and even months following an earthquake.</p>

7.12 Extended Emergencies

Some emergencies may extend over a long period of time. When this is the case the relief of ERG members and Support personnel should be considered in order to avoid fatigue.

In the event that the ERG is likely to be required to sit for longer than 8 - 12 hours the following procedures should be observed:

- Alert alternates for each group member, giving them the time that they will be required to start their take-over

- Change over times of individual team members should be spread out over a reasonable period of time
- The hand over is to include a complete brief on the incident. The departing team member must sit with the alternate until he/she is satisfied that the alternate is fully conversant with the situation and his/ her duties
- Relieved group members must ensure they get adequate rest and sustenance, in case they are required further.

Responsibility for managing the arrangements for alternates to ensure group efficiency lies with ERG Leader.

7.13 Supporting Information

OHSE Coordinator maintains generic information over and above that contained within the ERC, which may be required by the ERG to respond to an incident.

Individual ERG members must ensure that information that they may be required to support their specific function is readily available.

Attachment 1 - Incident Situation Update Procedure Checklist

The ERG Leader should conduct formal updates on at regular intervals to all members of the ERG and Support personnel.

Updates should normally be held once an hour. The ideal duration of an update should be no more than 10 minutes.

Procedure

- ERG Leader gives a 10-minute notice.
- All ERG and Support personnel to attend.
- All telephones in the Emergency Response Centre (except the ERG telephone line) are diverted to the Switchboard and instruction given to hold all calls until Update is over.
- Inform IRT of the update meeting.
- Commence update with operations brief on the latest state of incident.
- Follow with short statements from all the ERG members giving the latest situation update and actions from their own area of responsibility.
- Clarification of points of fact, if required, following each statement.
- Update completed. Individual ERG members revert to carrying out their actions.
- Telephone lines diverted back to Emergency Response Centre.
- Recorder to make a summary of the update / prepare and issue with copies to all ERG members. One copy to be retained on the central incident log.

Attachment 2 - Kidnap and Extortion Checklist

This checklist supplements the normal ERG checklists where Kidnap or other extortion is occurring or is possible.

Kidnap And Extortion Checklist	
	Responsibility
1. Call-out Emergency Response Team <ul style="list-style-type: none"> - ERG Leader - OHSE Coordinator - Human Resources Coordinator - Public Affairs Coordinator - Gove Relation Coordinator - Logistics Coordinator - Operations & Technical Coordinator - IT& C Coordinator - Recorder 	ERG Leader
2. Establish secure communications link with IRT	OHSE Coordinator
3. Ensure secure meeting room for ERG.	OHSE Coordinator
4. Maintain effective logs	Recorder
5. Establish: <ul style="list-style-type: none"> - The current situation - The political and operational background - If any contacts or demands have been made by the instigators. - Who is aware of the incident <ul style="list-style-type: none"> • Government • Security Forces/Police of country • Australian Embassy/High Commission • Local employees • Relatives - What the country's policy is concerning negotiation with kidnapers etc. 	ERG Leader
6. Notify IMT Leader and pass on details	ERG Leader
7. Consult with professional advisors/security consultants. ERG Leader to make final decision upon confirmation from BPDB Security Adviser.	ERG Leader
8. Consider the need to bring in other internal and external expertise, or reduce the team. In general, confine knowledge to minimum team.	IMT
9. Evaluate the situation <ul style="list-style-type: none"> - Is there positive evidence of kidnap? - How reliable is the available information? - Are the instigators known to be criminals, psychopaths or terrorists? - What are the likely future actions of the instigators? 	IMT/ERG

Kidnap And Extortion Checklist	
	Responsibility
<ul style="list-style-type: none"> - What is the risk? <ul style="list-style-type: none"> • What threats have been made? Likely to be carried out? • Is there a threat to life - hostage or others? • Are other employees/families at risk? • What is the business risk? • What is the local Government likely to do if you negotiate? 	
<ul style="list-style-type: none"> - Need for containment of information - is containment of information possible, likely to last and appropriate? - What time scale may the Company have to work to? - What is likelihood rescue? - What attitude is local Government likely to take? - What are the immediate implications on operations? 	IMT/ERG
11. Confirm Company objectives <ul style="list-style-type: none"> - Remove threat to life - Display Company's determinations to show firm resolves and remain a responsible corporate citizen. 	IMT
12. Advise ERG on local laws and potential liabilities relating to communication and negotiation with kidnappers etc. and other liabilities.	Legal
13. Consider basic Company policies/strategies <ul style="list-style-type: none"> a. Response b. Control/secretcy c. Risk 	IMT
14. Confirm roles, powers and delegated authority of both the ERG and the IRT. <ul style="list-style-type: none"> - Who is to be the ultimate Decision Maker? - Who is to conduct any negotiations? - Who will make up the Negotiating team locally? - Is additional support required in Country? 	IMT
15. Decide basic policies and initial way ahead. How much is to be pro-active, and how much sit-and-wait?	IMT

Attachment 3 – Government, key stakeholder & Media Holding Statement

Date:

Press Release No 1

Time:

BPDB regrets to confirm that an incident – (describe in broadest terms) –

occurred at – (site/location) –

at – (time) –

today/yesterday – (date)-.

BPDB have mobilised its Emergency Response Teams, and is working closely with the Local Emergency Services and has / is contacted / ing the relevant authorities

Details of the incident are not yet confirmed, but every action is being taken to safeguard lives and the environment.

A further statement will be issued as soon as more information becomes available.

Direct enquiry lines have been established as follows:

Media ****

Relatives ****

Notes for Editors:

Attachment 4 - Initial Statement to Staff

Note: To be sent by electronic mail to all within the Country office, and to all BPDB locations and offices

From Chief Engineer, (name of location)

Date

Time

INCIDENT REPORT

All staff should be aware that an incident has occurred at (place) at (time)

Today/yesterday.

(Briefest description of incident, e.g. The Installation is on fire following an explosion).

The local Incident Response Team and the Emergency Response Group in (location name) are taking necessary action.

More information will be made communicated, as it becomes available. In the meantime any staff member approached for information by outside sources should refer them to the ERG Media Information Group in (location tel. No. xxxxx)

Chief Engineer, (name of location)

Attachment 5 - First To Arrive Procedure

The steps described in this procedure are to be used by the first person arriving in the Emergency Response Centre (ERC). A package of equipment and documents are ready and available for the first to arrive in the ERC.

- First person to arrive in the ERC is to assume the roles and duties of the ERG Leader. The 2nd person to arrive is to assume the role of OHSE Coordinator (unless this person is the designated ERG Leader).
- Set-up the first telephones in the dedicated slots of the ERC table, set-up the Status Boards from the storage room and display the stationary items see **Attachment 10**.
- Establish contact the IRT Leader at the emergency site and confirm latest details on the emergency and support requested.
- Fax the unlisted ERG telephone numbers to the affected IRT only.
- Make preparations for initial statement to all office staff.
- Make preparations for holding statements to Government, key stakeholders and Media as appropriate.
- Make personal notes of all calls and actions.

This procedure and further guidance on the use of the Emergency Control facility and equipment are available in the ERC.

Attachment 6 - Security and Reception Standing Instruction

- Office Building Security staff to ascertain the identity of all personnel walking in/out of the office premises.
- Restrict all access to card / pass / permission holders.
- Always ensure tight security in all entry/exit points.
- Ensure availability of keys for all the areas.
- Update and maintain the keyboard status.
- Exercise extra caution during emergency situations.
- Always ensure company assets / personal property and valuables are secured and protected.
- Confidential things should be kept in a secured place.
- Visitors should be received at the reception.
- The reception on duty should inform to concern department to receive the visitor and inform the visitor to wait in the reception till a responsible person arrives.
- Reception to ensure that not to leave the visitors to wander on their own.
- The security / responsible person escort visitors.
- All the material in / out should be controlled through authorised gate passes.
- Identify strangers and report to Manager Administration
- No media representatives to be admitted to any site.

Attachment 7 – BPDB Emergency Response Centre

Attachment 8 – Emergency Response Centre Equipment List

ITEM	QUANTITY	DESCRIPTION
1.	5	Dedicated direct dial telephone lines (4 PABX immediate prioritise call numbers)
2.	1	Dedicated speaker-phone – direct inside line from emergency site
3.	2	Dedicated fax machines; 1 x incoming, 1 x outgoing (minimum of 1 at least)
4.	1	Emergency power back-up
5.	1	Satellite / GMS Mobile (Thuraya base Station) phone battery chargers (To be procured)
6.	2	Location time clock (Local and Thai time)
7.	1	Network computer with e-mail capability, infra red remote keyboard
8.	2	White board(s)
9.	1	Multi media player DVD, Video recorder, television and AM/FM radio (or immediate vicinity access)
10.	1	Photocopy machine (immediate vicinity access)
11.	1	LCD projector and screen
12.	1	Video Conferencing Facility
13.	1	Voice / Call monitoring system
14.	2	Printer (immediate vicinity access to B&W and Colour)
15.	1	Large location wall maps and blow-up photographs of all assets / sites
16.	1	Site environmental wall map
17.	1	Large organisational wall chart identifying site emergency response, ERG response incumbent roles
18.	1	incident management plan
19.	1	Emergency Response Plan
20.	1	Health, Safety and Environmental Policies

ITEM	QUANTITY	DESCRIPTION
21.	1	Medical Emergency Response Plan
22.	1	Field Safe Operating Procedures / Drawings
23.	1	Relevant EHS Legislation and Incident notification matrix
24.	1 ea (min)	<p>MAPs [laminated]</p> <ul style="list-style-type: none"> • Dhaka City Guide Map • Cyclone Map <p>Wall Chart</p> <ul style="list-style-type: none"> • External Contacts Checklist • Incident Checklist – Status Board • Evacuation Checklist • Kidnap Checklist • Bomb Threat Checklist • Bomb Threat Response Actins • Well Status Record • ERG Weekly Duty Rota • Blank Wall Chart
25.	1	Bangladesh Yellow Pages (2015)
26.	10	Post-It Pads large
27.	3	White Board Duster
28.	3+3	Marker (Red & Black)
29.	1+1	Scotch Tape holder + Roll Tape
30.	15	File clip
31.	1+1	Stapler + Staples
32.	20	Note Book
33.	30	Telephone Call Record
34.	30	General Notification
35.	30	Media Holding Statement

ITEM	QUANTITY	DESCRIPTION
36.	30	Emergency Response Log
37.	20	Oil Spill Notification
38.	20	Initial Statement to Staff
39.	5	Emergency Contact Directory
40.	60	Blank white papers

Attachment 9- Telephone Call Record

(Use one page per call)

Call Taken By:	Extension No:	Date:	Time:
-----------------------	----------------------	--------------	--------------

Call Source: Government: <input type="checkbox"/>	Media: <input type="checkbox"/>	Employee: <input type="checkbox"/>	Employee Family: <input type="checkbox"/>	Public: <input type="checkbox"/>
Assistance Offer: <input type="checkbox"/>		Other: <input style="width: 100%;" type="text"/>		

Caller details:

Name: _____

Title/Relationship: _____

Organisation/Department: _____

Phone Number: _____ Fax Number: _____

Message For: _____ Return Call By: _____

Message/Information Request: _____

Action Required:	Call Back <input type="checkbox"/>	Send Fax <input type="checkbox"/>	Wants To See You <input type="checkbox"/>	Will Call You <input type="checkbox"/>
Action By:			Date:	Time:

Attachment 10 – General Notification

NOTIFY

(Circle either Notifying of, or Updating Emergency Information)

UPDATE

Location		No:		Date:		Time:	
Priority	Urgent <input type="checkbox"/>	Immediate <input type="checkbox"/>	Standard <input type="checkbox"/>				
Emergency	Medical <input type="checkbox"/>	Fatality <input type="checkbox"/>	Environment <input type="checkbox"/>	Natural Disaster <input type="checkbox"/>			
Oil Spill	<input type="checkbox"/>	Marine <input type="checkbox"/>	Explosion <input type="checkbox"/>	Fire <input type="checkbox"/>	Aviation <input type="checkbox"/>	Extortion <input type="checkbox"/>	
Other:							
Injuries	No. Of Fatalities		No. Of Serious Injuries		No. Of Minor Injuries		
DO NOT LIST NAMES ON THIS FORM - Report names verbally to EC/ERG Leader							
Injuries This Report:							
Updated	Dry <input type="checkbox"/>	Wet <input type="checkbox"/>	Windy <input type="checkbox"/>	Wind Direction	Wind Speed		
Weather							
Forecast:	Other:						
Impact on Immediate Operations:							
External Assistance	Govt. <input type="checkbox"/>	Mutual Aid <input type="checkbox"/>	External Agency <input type="checkbox"/>	Medical <input type="checkbox"/>	Police <input type="checkbox"/>	Fire <input type="checkbox"/>	
Mobilised:	Other:						
Forward Response Plan:							
Next 30 Mins:							
Next 6 Hrs:							
Next 12 Hrs:							

Last External Contact:								
Agency	Time	By	Agency	Time	By	Agency	Time	By
Aviation			Govt.					
Medical								
Police								
Response Room Incumbents: (Role and Person)								

Prepared by:		Approved by:	
Distribution:	ERG <input type="checkbox"/>		

Attachment 11 - Government Emergency Notification

1. (a) Name of Location:		Date:	Time:
(b) Name of Manufacturer:		Ph:	Fax:
Address:			
(c) (i) Registration Number:			
(ii) Licence Number: (as applicable)			
(d) (i) Nature of Site Activity: (products manufactured)			
(ii) National Industrial Classification, 1987 (at four digit level)			
Emergency	Medical	<input type="checkbox"/> Fatality	<input type="checkbox"/> Environment
			<input type="checkbox"/> Natural Disaster
Oil Spill	<input type="checkbox"/> Marine	<input type="checkbox"/> Explosion	<input type="checkbox"/> Fire
		<input type="checkbox"/> Aviation	<input type="checkbox"/> Extortion
Other: <input style="width: 80%;" type="text"/>			
3. Description of the Incident:			
(a) Date	Shift	Time	
(b) Department	Section	Location	
(c) Department Process			
(d) Incident Circumstances			
4. Emergency Measures Taken:			
5. Causes of Incident:			
- Known (specify)			
- Not Known			
- Information to be Supplied ASAP			
6. Nature and Extent of Damage:			
(a) Within the Location	No. Of Fatalities	No. Of Injuries	No. Of Illness
Persons Exposed to Incident			
Material Damage	<input type="checkbox"/> Danger Still Present	<input type="checkbox"/> Danger No Longer Exists	<input type="checkbox"/>
(b) Offsite	No. Of Fatalities	No. Of Injuries	No. Of Illness
Persons Exposed to Incident	<input type="checkbox"/>	Damage to the Environment	<input type="checkbox"/>
Material Damage	<input type="checkbox"/> Danger Still Present	<input type="checkbox"/> Danger No Longer Exists	<input type="checkbox"/>
7. Data Available for Assessing Effects of the Incident on Persons and Environment:			
8. Steps Already Taken or Envisaged:			
(a) To Alleviate Medium or Long-term Effects			

(b) To Prevent a Recurrence

(c) Any Other Relevant Information

Attachment 12 - Emergency Response Log

Page Number:		Date:	
Name:		Position:	
Contact Number:		Signature:	
Time	Activity Completed		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		
	•		

Attachment 13 - Bomb Threat Response Actions Response Actions

CONTROL

The ERG Leader is responsible for directing the action to be taken in response to any bomb threat. Responsibilities include the following:

- Producing a risk assessment.
- Devising and maintaining a search plan of the office.
- Devising and maintaining an evacuation plan.
- Liaising with the responsible authorities.
- Arranging staff awareness and bomb threat practices.

Bomb Threat

The person receiving the call will:

- Activate recording equipment if fitted and the threat is received by telephone. This could be mobile phone and have telephone on speaker phone
- Adopt helpful attitude and be conciliatory.
- Make written notes using guidelines issued for that purpose
- Report immediately to Security Focal Point.

The ERG Leader should inform management who must assess the credibility of the threat and possible consequences and consider whether to:

- Do nothing, evacuate or stay and search.
- Notify law enforcement agencies/emergency services.
- Alert neighbouring business/residents.
- Implement emergency shutdown procedures.

Search (only if search is not a Police responsibility)

Searches may be undertaken in response to a specific warning. Attention points:

- Know the police policy and role on search and evacuation.
- Prepare search plans in advance to ensure that premises are checked as quickly and effectively as possible.

- Divide the area into manageable-sized sectors.
- Form search teams familiar with the area.
- Define search priorities.
- Search in a logical and thorough manner so that no part of the sector is left unchecked.

"Do not touch or move any suspicious object"

Suspicious Object

If a suspicious object is found:

- If possible leave a marker near the device.
- Inform the Security Focal Point.
- Stay out of sight of the object at a safe distance (normally at least 25 metres) and report every possible detail to the Security Focal Point.

Evacuation

The decision to evacuate will be taken by management on the advice of the ERG Leader. The police will be consulted for advice:

- Evacuate as quickly and efficiently as possible using all available exits.
- Provide alternative routes to avoid the danger of passing close to any suspicious device.
- Consult neighbouring premises and emergency services.
- Gather all people in pre-designated "Assembly Areas" taking personal belongings with them.
- Do not use the car park as an assembly area.
- Check that everyone has left the premises

Attachment 13a - Bomb Threat Checklist

- Switch on tape recorder (if connected)
- Tell the caller which town/district you are answering from
- Record the exact wording of the threat
- Ask these questions
 - Where is the bomb right now?.....
 - When is it going to explode?.....
 - What does it look like?.....
 - What kind of bomb is it?.....
 - What will cause it to explode?.....
 - Did you place the bomb?.....
 - Why?.....
 - What is your name?.....
 - What is your address?.....
 - What is your telephone number?.....

- Record time call completed.....
- Keep telephone line open
- Where automatic number reveal equipment is available record number
- Inform the security focal point

Time informed.....

This part should be completed once the caller has hung up and the security focal point has been informed

Time and date of call.....

Length of call.....

Number at which call is received (Your extension number).....

- ABOUT THE CALLER

Sex of caller?..... Male Female

Nationality?..... Age?

- THREAT LANGUAGE

Well Spoken Irrational Taped

Foul Incoherent

Message read by threat-maker

- CALLER'S VOICE

Calm Crying Clearing throat

Angry Nasal Slurred

Excited Stutter Disguised

Slow Lisp Accent

Rapid Deep Familiar

Laughter Hoarse

If the voice sounded familiar, who did it sound like?

.....

- BACKGROUND SOUNDS

- | | | | | | |
|-------------------|--------------------------|------------------|--------------------------|--------|--------------------------|
| Street noises | <input type="checkbox"/> | House noises | <input type="checkbox"/> | | |
| Animal noises | <input type="checkbox"/> | Crockery | <input type="checkbox"/> | Motor | <input type="checkbox"/> |
| Clear | <input type="checkbox"/> | Voices | <input type="checkbox"/> | Static | <input type="checkbox"/> |
| PA system | <input type="checkbox"/> | Booth | <input type="checkbox"/> | Music | <input type="checkbox"/> |
| Factory machinery | <input type="checkbox"/> | Office machinery | <input type="checkbox"/> | | |

Other (specify).....

- REMARKS

.....

Signature.....Date.....

This appendix may be freely photocopied
 Letter and Parcel Bomb Recognition Points

- Foreign mail, air mail and special delivery
- Restrictive markings such as confidential, personal etc.
- Excessive postage
- Hand-written or poorly typed address
- Incorrect titles
- Titles but no names
- Mis-spellings of common words
- Oily stains or discolourations
- No return address
- Excessive weight
- Rigid envelope
- Lopsided or uneven envelope
- Protruding wires or tinfoil

- Excessive securing material such as making tape, string etc.
- Visual distractions

Attachment 14– Format for Urgent Facsimile Message

To:	BPDB Dhaka
Attention	ERG Leader
From	
Location	
Telephone	
Fax	
Subject	MEDIRESUCUE/MEDIVAC (Delete as applicable)
Date/Time:	
Name of Casualty:	
Nationality:	
Occupation:	
Employer:	
Diagnosis:	
Present Clinical State	
Transportation Requirements:	Escorted by Doctor/Medic/First Aider Conscious/Unconscious Stretcher/Walking Destination Ambulance/Car to Meet On Arrival Estimated Time of Arrival (if known)
Medical Support Service Contacted by Medic	

Attachment 15 - Terrorist Threat or Action Against company personnel or facilities

Upon receipt of terrorist threat or action against company personnel or facilities, the senior company official shall notify the Member- Generation Incident Manager who intern will notify police/rab/army for necessary actions. The following information can be used as a guide when reporting:

- a. Nature and circumstances of threat or incident including date, time, location, injuries and damages sustained.
- b. Fill data concerning affected employees including names and addresses of next of kin and whether they or other interested parties should be notified.
- c. Reports on contacts and assistance offers to next of kin, if made, if the next of kin is residing or located in the immediate area.
- d. If kidnapping/taking of hostages occurs, provide:
 1. Location, number, and identity of victims
 2. Number and identity of terrorists involved, organizations, weapons used, other descriptive information.
 3. Terrorist demands or claims.
 4. The local assessment of the situation, including effect on business operations.
 5. Initial actions taken by host government to respond to terrorist threat/incident. If company personnel, dependents, and facilities are threatened or subjects of a terrorist attack describe efforts in arranging enhanced security, medical assistance with host country officials (police, foreign minister, etc.).
- e. Precautionary measures taken for other employees at the location of the incident and elsewhere in the host country.
- g. Name of person sending message along with complete address, telephone number, and telex number for future contacts.

Terrorist Incidents & Kidnappings

Immediate Action

In the event of an actual or threatened terrorist incident or kidnapping, the Bangladesh Leadership Team shall be notified immediately. A sequence of events will occur at all locations; therefore, prompt detailed information is essential. The information above outlines what is needed in notification of this type of incident.

Checklists

Ransom Demand Telephone Checklist

Time of call: _____ Date: _____

Make every attempt to gain as much information from the caller as will furnish, but do not give the caller the impression you are reading questions from a checklist or that you are trying to keep him on the line so the call can be traced. Write down the responses of the caller word for word.

If a Demand:

Would you please repeat your statement?

Who is making this demand?

Why have you done this?

If a Kidnap:

What is he/she wearing?

Is he/she unharmed?

Could you explain what you want?

(Attempt to establish a time and date for next contact. Furnish a specific phone number.)

IF THE CALLER GETS INTO SPECIFICS ON PAYMENT, ASK:

What do you want?

If money: What currency and how do you want it?

Where and when should the ransom be delivered?

How should the payment be made?

End the call on a positive note by assuring the caller his demand will be communicated to the proper person in the company, as soon as possible. Leave the caller with the impression that his call has been understood and action will be taken. Make note of the following information.

Time call ended: _____

Background noises: _____

Sex of caller: _____

Approximate age: _____

Any accent: _____

Any voice peculiarity such as lisp or stutter?

What was the caller's attitude?

Was the caller sober?

Did the caller sound educated?

What did you notice about the call that you find unusual?

If the caller seemed familiar with the building or operation, indicate how:

Name of Person Receiving Call

Date

IMPORTANT: Pass this form to your supervisor immediately after completing call details.