

**SAFETY AND ACCIDENT PREVENTION MANAGEMENT / ADMINISTRATION
SYSTEM (SAMAS)** 1

2.3.17 EARTHQUAKE EMERGENCY MANAGEMENT PLAN 1

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PURPOSE

An earthquake is a sudden, rapid shaking of the ground caused by the breaking and shifting of rock beneath the Earth's surface. This shaking can cause buildings and bridges to collapse; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and huge, destructive ocean waves (tsunamis). Buildings with foundations resting on unconsolidated landfill, old waterways, or other unstable soil are most at risk. Buildings or trailers and manufactured homes not tied to a reinforced foundation anchored to the ground are also at risk since they can be shaken off their mountings during an earthquake. Earthquakes can occur at any time of the year.

SCOPE

- 1 This procedure covers all **COMPANY** projects and locations under the control of **COMPANY**. A **COMPANY** is defined as the organization with responsibility for management of safety at a construction site.

2.3.17.1 Introduction

- 1 During the month of April 2013 earthquakes occurred in Iran with varying degrees of tremors felt in the State of Qatar and the wider Middle East Region.
- 2 April 16th 2013 was by far the larger earthquake measuring 7.8 on the Richter scale with the tremors physically being felt in numerous locations and buildings across the region. Whilst events of this type are rare, the impacts could be serious both from a human and business scale.
- 3 Following these events, it is clear that there should have been an earthquake evacuation procedure. This emergency management plan has been developed; however, it requires integration into the existing emergency and evacuation plans.
- 4 It is advised that the earthquake procedure whilst very important is one element of a much larger requirement for Emergency Management Planning to ensure that all scenario's and eventualities are addressed inclusive of crisis management and business continuity

2.3.17.2 Key Points

- 1 Outlined below is a suggested approach that could be taken to take into account those other elements of emergency planning starting with a review of the current arrangements for buildings, towers and associated structures inclusive of car parks.
- 2 The suggested overall approach would be a three phase priority approach. The first phase identifying the 'as is' situation to the desired outcome of 'to be' and the 'future' requirements, but this is not limited and may require additional elements as recommended by other experts.

2.3.17.3 Responsibilities

- 1 Contractor is responsible for providing a safe and healthful workplace for its workers. Contractors are required to protect and train workers from the anticipated hazards associated with the response and recovery operations that workers are likely to conduct.
- 2 Employees / Workers also have a responsibility to ensure their own safety.

2.3.17.4 Definition

- 1 **Earthquake** is a term used to describe both sudden slip on a fault, and the resulting ground shaking and radiated seismic energy caused by the slip, or by volcanic or magmatic activity, or other sudden stress changes in the earth.

2.3.17.5 Action Required to Implement this procedure

Phase One: Gap Analysis ('as is')

- 1 Engage the relevant technical experts for the various aspects of the review, inclusive of but not limited to Fire Design Engineer, Health and Safety Consultant, training providers etc.

- 2 Review all existing emergency process, procedures, plans and protocols within the organisation and engage with other stakeholders such as Civil Defence to understand any wider requirements, etc.
- 3 Review of all buildings physical emergency evacuation systems to ensure they meet relevant codes and legislative requirements.
- 4 Review all evacuation assembly points and engage other building owners nearby the organisation building.
- 5 Develop work assignments for the organisation personnel and Safety Wardens during earthquakes.
- 6 Review the organisation buildings maintenance department records.
- 7 Identify relevant codes, legislative requirements and specific procedures needed for forward planning.
- 8 Identify salient issues for consideration namely high rise building, crowded indoor public places, indoor safety, outdoor safety, automobiles etc.
- 9 Identify non-structural hazards such as file cabinets, rack storage units, book shelves, HVAC ...etc.
- 10 Involve other stakeholders such as the organisation Health and Safety Section, Civil Defence, Ministry of Environment, other building owners in the immediate district etc to ensure their views, requirements, interests and responsibilities are established.
- 11 Review existing business resiliency and continuity plans, process and procedure.
- 12 Review existing crisis management plans, process and procedure.
- 13 Indicate future planning and requirements inclusive of the proposed new and existing car park.
- 14 Include training and awareness plan for the wider organisation based upon the identified training needs.
- 15 Undertake training and awareness for any developed process and procedures.
- 16 Produce gap analysis report detailing all required changes, upgrades to process, procedures, plans, training requirements, emergency systems etc.
- 17 Present outcomes of gap analysis.
- 18 Develop an initial implementation plan, methodology and programme for Phase 2 and 3 based upon the outcomes of the Gap Analysis.
- 19 Review plans to backup computer records and equipment of vital records.

Phase Two: Implementation ('to be')

- 1 Implement agreed gap analysis outputs/approach inclusive of all manuals, procedures, technical information required.

- 2 Develop administrative processes and procedures to support the plan.
- 3 Communicate the plan to all those affected at different level of the business.
- 4 Include for planning of any associated drills and lessons learnt.
- 5 Implement lessons learnt into plan, processes and procedures.
- 6 Establish periodic review of emergency systems.

Phase Three: Future Requirements

- 1 Advise if engagement of further consultants/engineers to undertake seismic survey of existing buildings.
- 2 Development of business continuity plans.
- 3 Development of post-earthquake assessment procedures.
- 4 Development of crisis management plans.
- 5 Undertake training and awareness for any developed process and procedures.
- 6 Include for planning of any associated drills and lessons learnt.
- 7 Development of all related support materials.
- 8 Development of coordination procedures with Civil Defence and other authorities during earthquakes.
- 9 Periodic review of emergency planning systems.

2.3.17.6 What Should We Do During An Earth Quake?

- 1 Stay calm!
- 2 If you're indoors, stay inside and if you're outside, stay outside.
- 3 If you're indoors, stand against a wall near the centre of the building, stand in a doorway, or crawl under heavy furniture (a desk or table i.e. cover your head and neck).
- 4 Drop down onto your hands and knees.
- 5 Stay away from windows and outside doors.
- 6 If you're outdoors, stay in the open away from power lines or anything that might fall. Stay away from buildings.
- 7 Don't use matches, candles, or any flame.
- 8 Broken gas lines and fire don't mix.

- 9 If you're in a car, stop the car and stay inside the car until the earthquake stops.
- 10 Don't use elevators or put yourself at risk.
- 11 For impaired mobility, if you cannot drop to the ground, try to sit or remain seated so you are not knocked down. If you are in a wheelchair lock your wheels. Protect your head and neck with a large book, a pillow, or your arms.

2.3.17.7 What Should We Do After an Earth Quake?

- 1 Check yourself and others for injuries. Provide first aid for anyone who needs it.
- 2 Check the building, water, and electric lines for damage. If any are damaged, isolate if possible and report to relevant authorities.
- 3 Turn on the radio. Don't use mobile phones unless it's an emergency.
- 4 Stay out of damaged buildings.
- 5 Stay inside buildings unless directed to do otherwise.
- 6 Evaluate and critique once a crisis situation is stabilised. Expect further aftershocks.
- 7 Stay away from beaches. Tsunamis sometimes hit after the ground has stopped shaking.
- 8 If you're at work, follow the emergency arrangements and instructions for the particular building after the earthquake.

2.3.17.8 Earthquake Evacuation Procedures

- 1 After receiving advice to evacuate a building after an earthquake from the appointed Coordinator.
 - (a) Do not stop to collect personal items.
 - (b) Assist others and escort your visitors out of the building.
 - (c) Leave in an orderly fashion, do not panic, do not run or push.
 - (d) Evacuate the building by the nearest fire escape route.
 - (e) Never use the lifts.
 - (f) Go directly to your designated assembly point or as directed by the appointed coordinator.
 - (g) Report any missing or injured persons.
 - (h) Remain at the designated fire assembly point unless directed to do otherwise from the appointed coordinator.