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EMERGENCY PROCEDURE

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Document Number : P04 Revision Number : Date : 10.4.2017

EMERGENCY PROCEDURE

INDEX

1.	INTRODUCTION	3
2.	SCOPE	3
3.	OBJECTIVE	3
4.	RESPONSIBILITIES	3
5.	CONNECTING DOCUMENTS	4
6.	POTENTIAL EMERGENCIES	4
	6.1 Serious Incident/Accident	5
	6.2 Fire/Explosion	5
	6.3 Serious Vehicle Accident	6
(6.4 Major or Extensive Leakage/Spill	7
	6.5 Natural Disasters (Earthquake, Flood)	7
	6.6 Severe Weather Conditions	9
(6.7 Structure Collapse	9
7.	EXTERNAL ASSISTANCE	10
8.	EVACUATION PLAN	10
9.	VERY HIGH RISK WORKING AREAS	11
10	. COMMUNICATION PLAN	11
11.	. EMERGENCY EQUIPMENT	12
12.	. TRAINING & DRILLS	12
13.	. EMERGENCY WARNING	12
14.	. APPENDICES	13
	APPENDIX 1: Incident/Accident Action Plan	14
	APPENDIX 2: Fire Action Plan	
	APPENDIX 3: Leakage Action Plan	16
	APPENDIX 4: Vehicle Accident Action Plan (Site Area)	
	APPENDIX 5: Emergency Phone Numbers	
	APPENDIX 6: Emergency Communication Procedure	
	APPENDIX 7: Evacuation Plan	
	APPENDIX 8: Map with Directions to nearest hospital	
	APPENDIX 9: Use of Fire Extinguisher	23

Document Number : P04 Revision Number : Date : 10.4.2017

EMERGENCY PROCEDURE

1. INTRODUCTION

Emergency is a situation involving a major incident or the potential for a major incident that cannot be dealt under the normal procedures and requires immediate action to control the consequences.

2. SCOPE

In general, for the scope of this procedure, emergencies include an incident that causes or could potentially cause serious injuries to project personnel or third parties as well as major damages to environment and/or to the project equipment.

This HSE procedure for emergencies applies to all activities on site.

3. OBJECTIVE

The main objective of this HSE procedure is to define actions and responsibilities within the specific Project organization in order to control as far as reasonably practicable an emergency case in order to minimize the consequences of an incident or the potential for an incident.

This procedure has to be updated during the Construction phase.

When the plant will be in start-up / trial operation phase, this emergency procedure will be reviewed to cover also operational issues.

4. RESPONSIBILITIES

Site Manager is responsible:

- to give the order for evacuation,
- to communicate with external services (if required)
- for the proper implementation of this procedure,
- for the approval of the Emergency Plan,
- to inform the Client.

HSE Site Manager is responsible:

- to prepare the specific Project's Emergency Plan,
- to monitor the implementation of Project's Emergency Plan ,
- for the training of the Emergency Response Team,
- to inform the Site Manager immediately for any emergency incidents' occurrence,
- to coordinate the actions in case of emergency,
- to collect all the emergency incident relevant information and to prepare the relevant report,
- to submit the report to the Site Manager,
- to act as substitute of the absent Site Manager in case of an emergency incident.

HSE Supervisors are responsible:

- for monitoring the implementation of emergency prevention measures,
- for checking the emergency means/equipment for maintenance and control.

Document Number: P04 Revision Number: Date: 10.4.2017

EMERGENCY PROCEDURE

Subcontractor is responsible:

- to follow all provisions of this procedure,
- to provide adequate emergency means/equipment as per site's Emergency Plan requirements,
- to provide appropriate number of Emergency Response Team members in line with its manpower in site.

Security Manager/Responsible person is responsible:

- for activating the alarm system (if any) when ordered to do,
- to open the gates and prepare the assembly area in case of site evacuation,
- to support any external assistance.

Nurse and First Aid Team are responsible for providing First Aid and medical support (if needed) to any injured person.

The **Emergency Response Team (ERT)** is responsible to respond to any potential emergency incident as trained to do under the coordination of the HSE Site Manager. The emergency response team will increase from a minimum of 5 persons and then will increase gradually and according to the number of workforce (ratio 5% of the workforce).

Foreman/Supervisor is responsible:

- to immediately inform the HSE Site Manager or the Site Manager in case of emergency incident,
- to remove the workers from the area of incident.

Site Personnel, in case of emergency, shall immediately inform the authorized persons (see Appendix 5 – Emergency Phone Numbers List) or their Foreman/Supervisor.

5. CONNECTING DOCUMENTS

This document shall be read in conjunction with the following:

- Fire Prevention and Protection Procedure (P13)
- Accident/Incident Procedure (P05)
- Chemical & Hazardous Material Handling Procedure (P08)
- Transportation Procedure (P10)
- Prevention of Leakage Procedure (P09)

6. POTENTIAL EMERGENCIES

Emergencies can include:

Serious Injury / Accident

Document Number : P04 Revision Number : Date : 10.4.2017

EMERGENCY PROCEDURE

- Fire / Explosion
- Serious Vehicle Accident
- Major or Extensive Leakage/Spill
- Natural Disasters (Earthquake, Flood)
- Severe Weather Conditions (Strong Winds, Rainstorm)
- Structural Collapse

6.1 Serious Injury/Accident

In case of a serious injury/accident, the following immediate actions shall be taken:

- The person who first noticed the injured and/or the incident shall immediately inform the authorized persons (see Appendix 5 Emergency Phone Numbers) or his Foreman/Supervisor, so as the Site's Emergency Response mechanism to be activated.
- Foreman/Supervisor shall remove other personnel from the incident area. Only the presence of necessary personnel at incident area shall be allowed.
- The injured person shall be transferred to the First Aid Station (if it is safe) for further medical treatment and/or recovery until the Ambulance arrive.
- The Doctor/Nurse shall escort the injured person during his transportation to the Hospital.

The major concern is to minimize the consequences of the incident and the protection of human life.

An investigation to be carried out and a relevant report to be issued.

Note: Relevant Emergency Plans (e.g. Work At Height Emergency Response Plan & Confined Space Emergency response Plan) to be followed, for cases where conditions demand extra actions and/or means to deal with the rescue of an injured person.

6.2 Fire/Explosion

Fire prevention measures shall be applied on site to prevent fire incidents. <u>Though, if a fire breaks out the following immediate actions shall be taken:</u>

- The person who identified the fire shall immediately warn others nearby to move away and inform the authorized persons (see Appendix 5 Emergency Phone Numbers) or his Foreman/Supervisor, so as the Site's Emergency Response mechanism to be activated.
- Electricians to cut-off power (where required).
- Foreman/Supervisor shall remove personnel from the fire incident area.

Document Number : P04 Revision Number : Date : 10.4.2017

EMERGENCY PROCEDURE

- The ERT Leader shall evaluate the fire incident conditions and decide whether it can be faced internally (by Site's ERT and Fire extinguishing means) or External Assistance to be requested.
- Evacuation procedure to be applied when necessary (under the order of the Site Manager).

When the fire is extinguished the Site Manager and the HSE Site Manager shall inspect the scene to assess the situation and give the permission to proceed or to instruct for further measures to be taken.

An investigation to be carried out and a relevant report to be issued.

Response to Fire - General Principles

In case that someone is in danger (e.g. his clothes caught fire) shall be assisted by others without putting themselves at risk.

If the fire is not extended, nearby personnel shall try to extinguish the fire immediately. That has to be done if they are properly trained and not putting themselves at risk.

Firefighting Fundamentals

- Fire type (burning material) to be known so as the respective type of fire extinguisher to be used. If there is a doubt regarding the type of fire, the area shall be evacuated
- A fire shall be suppressed if possible, by the use of fire extinguishers, in its early stages because the fire can spread quickly from the point of beginning.
- If there is not available a suitable type and size fire extinguisher, it is preferable that fire extinguishment to be avoided and the area to be evacuated.
- In case that large quantity of smoke is produced by fire, which could be inhaled during the
 use of fire extinguisher, it is better try to be avoided. Any kind of fuel fire produces some
 amount of carbon monoxide. But when synthetic materials are burning, such as synthetic
 fibers, etc. toxic gases are produced together with carbon monoxide. These gases may cause
 death in very small quantities.
- The right position when someone uses a fire extinguisher is to have his back to the emergency exit or escape route so as not to be trapped and being able to escape immediately.

For further instructions on Fire extinguisher use, see Appendix 9.

6.3 Serious Vehicle Accident

Document Number : P04 Revision Number : Date : 10.4.2017

EMERGENCY PROCEDURE

Safe driving and site traffic rules and signs shall be always followed by anyone driving within site areas. Nevertheless, in case that a serious car accident happens, major concern is the safety and the health protection of persons involved.

Thus a serious car accident can lead to injuries and/or fire simultaneous actions have to be immediately taken. In case someone injured and /or there is a fire break, the appropriate actions as per clauses 6.1 and 6.2 to be taken immediately.

6.4 Major or Extensive Leakage/Spill

In case of a major/extensive leakage/spill, the following immediate actions shall be taken:

- The person who first identified the leakage/spill shall immediately inform the authorized persons (see Appendix 5 Emergency Phone Numbers) or his Foreman/Supervisor, so as the Site's Emergency Response mechanism to be activated.
- Foreman/Supervisor shall remove personnel from the incident area and try stopping the source or eliminating it, if it is safe for him. Also, he shall arrange to barricade the area.
- The ERT Leader has to evaluate the situation and decide whether the leakage can be handled internally by the use of absorbent materials/spill kits or external assistance to be requested.
- Relevant info (MSDS) shall be available.
- Contaminated absorbent materials shall be collected, enclosed in fit for purpose container(s) and stored in hazardous waste area until proper disposal/treatment action is taken, as per relevant procedure.

An investigation to be carried out and a relevant report to be issued.

6.5 Natural Disasters (Earthquake, Flood)

All personnel shall be adequately trained and instructed about how to act in case that a natural disaster as a flood and/or an earthquake occurs.

Panic in these situations is the major risk for someone.

Everyone at site shall be informed about the existing evacuation routes and location of assembly points during induction training.

In case of Natural Disasters (Earthquake & Flood), the following instructions shall be followed:

A) **EARTHQUAKE**

Document Number : P04 Revision Number : Date : 10.4.2017

EMERGENCY PROCEDURE

If Indoors:

- Stop all works.
- During an earthquake stay in it, stay calm and await instructions from the Emergency Response Team for safe evacuation.
- Turn-off equipment/appliances that may be dangerous.
- Do not stay in places where there is a risk of dangerous escape of gases or substances.
- Get away from any machinery.
- Stand away from objects, furniture, or any equipment that might fall on you.
- Cover yourself under a durable desk or a table.
- Do not approach windows.
- Do not use the elevator.
- Follow the recommended evacuation routes.

If Outdoors:

- Stay calm and get away from any machinery.
- Keep away from overhead fixtures (e.g. overhead electrical lines).
- Deactivate equipment/appliances that may be dangerous .

Evacuation procedure to be applied when necessary (under the order of the Site Manager).

B) FLOOD

If Indoors:

- Stop works.
- Be ready to evacuate as directed by the Emergency Response Team.

If Outdoors:

- Stop works.
- Climb to high ground and stay there.
- Avoid walking or driving through flood water especially if you do not know the depth of the water.
- Stay calm and await instructions from the Emergency Response team.
- If driving and vehicle stalls, abandon it immediately and climb to a higher ground.

Evacuation procedure to be applied when necessary (under the order of the Site Manager).

When Site Evacuation procedure is activated under the order of the Site Manager, all personnel shall assembly at the predefined Meeting/Assembly points. Personnel shall be accounted. If a person is not accounted for, Emergency Personnel shall be quickly notified.

Document Number: P04 Revision Number: Date: 10.4.2017

EMERGENCY PROCEDURE

6.6 Severe Weather Conditions

Severe weather conditions may cause multiple emergencies. The Site Management shall receive info daily about the forecast of extreme weather changes and or phenomena, and give the appropriate instructions as required per case.

Strong Winds:

- Stop all works at heights in open air Secure equipment.
- Stop all lifting activities Secure equipment and loads.
- Secure all free and/or light materials placed at working places and/or platforms.

Rainstorm:

- Stop all activities in open areas.
- Secure all electrical apparatus.
- Make sure that your drainage system is clear from debris.
- Use the available flood restoration equipment (e.g. pumps).

6.7 Structure Collapse

A structure collapse may be caused mainly by:

- Natural phenomena such as earthquakes, severe storms,
- Design and construction defects,
- Fire or explosion.

Immediate actions:

- Works to be stopped.
- Foreman/Supervisor shall remove personnel from the incident area.
- Foreman/Supervisor shall immediately inform the authorized persons (see Appendix 5 Emergency Phone Numbers), so as the Site's Emergency Response mechanism to be activated.
- Electricians to cut-off power (where required).
- Personnel have to act as per ERT instructions.
- ERT Leader has to evaluate the situation and decide whether the incident can be faced internally or external assistance required.
- The Site Manager has to communicate with External Assistance Services (if required) such as Fire Brigade, etc.

Document Number: P04 Revision Number: Date: 10.4.2017

EMERGENCY PROCEDURE

Evacuation procedure to be applied when necessary (under the order of the Site Manager).

An investigation to be carried out and a relevant report to be issued.

7. EXTERNAL ASSISTANCE

Depending to the nature and magnitude of an emergency situation, external assistance might be required. Therefore always ensure communication between the Site Management and the external services.

External Services can include:

- Ambulance Service
- Fire Brigade
- Police
- Special forces
- Environmental Authority (in the event of a large spillage)
- Laboratories, etc.

During a request for external assistance, accurate information about the incident shall be given.

When the external services arrive for assistance they take over control of the situation. The PROJECT personnel¹ should provide any help requested for and act according to the instructions provided by the external services.

1: PROJECT personnel include Client, Contractor, Subcontractors and visitors etc. on site.

8. EVACUATION PLAN

As assessed per case and magnitude of an emergency incident, partial or full site evacuation may be required. The order for evacuation in any case is given by the Site Manager or his Deputy.

In case of evacuation order, the following steps shall be taken:

- Works shall be stopped immediately (in area of evacuation).
- Appliances, tools, etc. shall be turned off, gas cylinders to be secured and any flammable materials to be removed.
- Authorized persons and ERT to be activated.
- Evacuation routes to be followed.
- Personnel to act as per authorized personnel instructions.
- Personnel to assembly at predefined assembly points.
- Foremen/Supervisors shall account for missing personnel.
- Authorized Persons to be immediately informed in case of missing person.
- Security persons shall open the gates, follow the instructions of authorized persons and support any external assistance.

Document Number: P04 Revision Number: Date: 10.4.2017

EMERGENCY PROCEDURE

ERT together with the authorized persons and/or external services (when required) shall inspect/check the site areas for remaining persons and/or hazardous situations.

After the end of evacuation, an investigation shall be carried out and a relevant report to be issued.

9. VERY HIGH RISK WORKING AREAS

For sites in areas or Countries with potential instability, epidemic events or terrorist attacks a Security/Evacuation plan shall be prepared by Project Management prior to mobilization of the personnel. The context of such a Plan has to provide detailed information about the transportation means, communication ways, responsibilities, emergency actions, evacuation route planning (also alternatives), security escort, etc., in order to ensure to the greatest practical degree the safe, secure and efficient evacuation of the site personnel from the area and/or country. These Plans are considered as confidential/classified.

10. COMMUNICATION PLAN

<u>Site's Emergency Plans consist mainly of the following action plans, instructions and procedures which shall be followed in case of emergency occurrence:</u>

- Emergency Actions Plans: See Appendices 1 to 4.
- Emergency Phone Numbers: See Appendix 5.
- Emergency Communication Procedure: See Appendix 6.
- Site Evacuation Plan: See Appendix 7.
- Map with directions to the nearest Hospital: See Appendix 8.
- Use of Fire Extinguisher: See Appendix 9

Information about the above Plans should be updated regularly, especially if changes in organisation of site arrangements occurred and it has to be displayed at:

- The site gates
- Client's office
- Contractor's office
- Subcontractor's office
- HSE office
- Site Notice boards
- First Aid Station
- Camp / Restaurant (if exist)

Document Number : P04 Revision Number : Date : 10.4.2017

EMERGENCY PROCEDURE

11. EMERGENCY EQUIPMENT

Main emergency equipment/means are featured on "site layout" (e.g. Alarm systems, siren, fire extinguishers, power resource, evacuation routes, medical unit) and declared to all personnel during induction/specific trainings.

Equipment is periodically checked by the HSE Supervisor(s) for maintenance and control (e.g. Fire extinguishers, Spill Kits, FA Kits).

Depending per case and kind of emergency, the appropriate emergency equipment varies. For example, when dealing with a leakage the prime emergency equipment includes absorbent materials (spill kit) and the appropriate PPEs (if required) as per relevant MSDS instructions.

If an emergency requires the rescue of an injured from an area at Height, then emergency equipment can include Crane/Man basket, ladders, stretchers, etc.

12. TRAINING & DRILLS

Every person on site must be trained in basic fire-fighting rules and in the evacuating procedure during induction training.

All Emergency Response Team members shall be properly trained about that duty.

All First Aid Team members shall be properly trained in first aid at basic life support level.

Fire drills or any other drills are carried out on an annual basis or following special occasions.

The Emergency Drills shall be evaluated and relevant reports to be issued.

13. EMERGENCY WARNING

1. INITIATION OF AN EVENT

In the case of the emergency the following sounds will be applicable which are relevant to the existing Project:

	Three short sounds	()
2.	SERIOUS EVENT (The site	must be immediately evacuated)

One long sound ()

The Site Manager gives the order that the event has ended or not. The personnel shall be fully informed and instructed accordingly after the END of the Evacuation event, by the authorized persons.

Document Number : P04 Revision Number : Date : 10.4.2017

EMERGENCY PROCEDURE

Five short sounds (----)

Note: Except an installed Siren system also a klaxon, an air horn or a whistle, depending on the size and complexity of the site, can be used by the authorized persons (Emergency Team, etc.) for emergency warning. Any warning needs to be distinctive, audible above other noise and recognizable by everyone.

14. APPENDICES

Appendix 1: Incident/Accident Action Plan

Appendix 2: Fire Action Plan

Appendix 3: Leakage Action Plan

Appendix 4: Vehicle Accident Action Plan (Site Area)

Appendix 5: Emergency Phone Numbers

Appendix 6: Emergency Communication Procedure

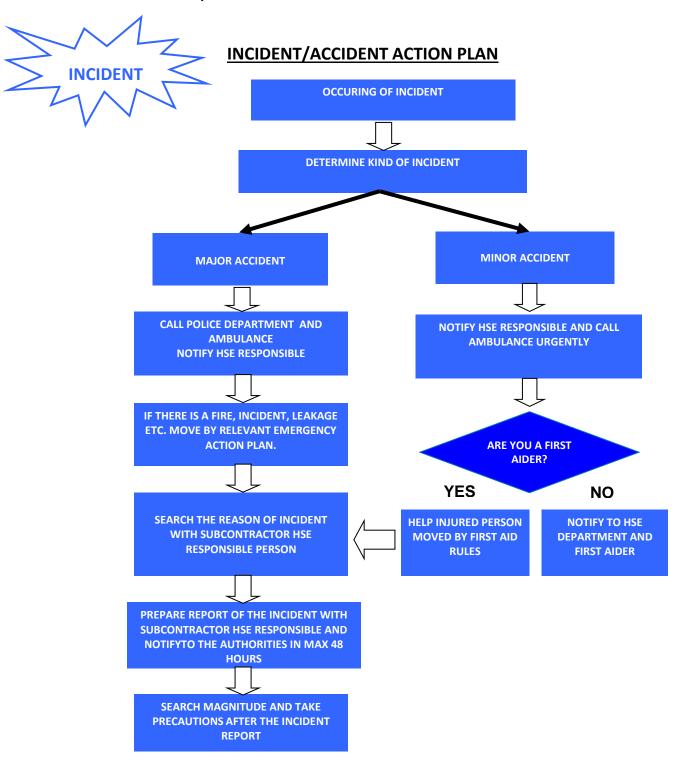
Appendix 7: Site Evacuation Plan

Appendix 8: Map with directions to the nearest Hospital

Appendix 9: Use of Fire Extinguisher

Document Number : P04 Revision Number : Date : 10.4.2017

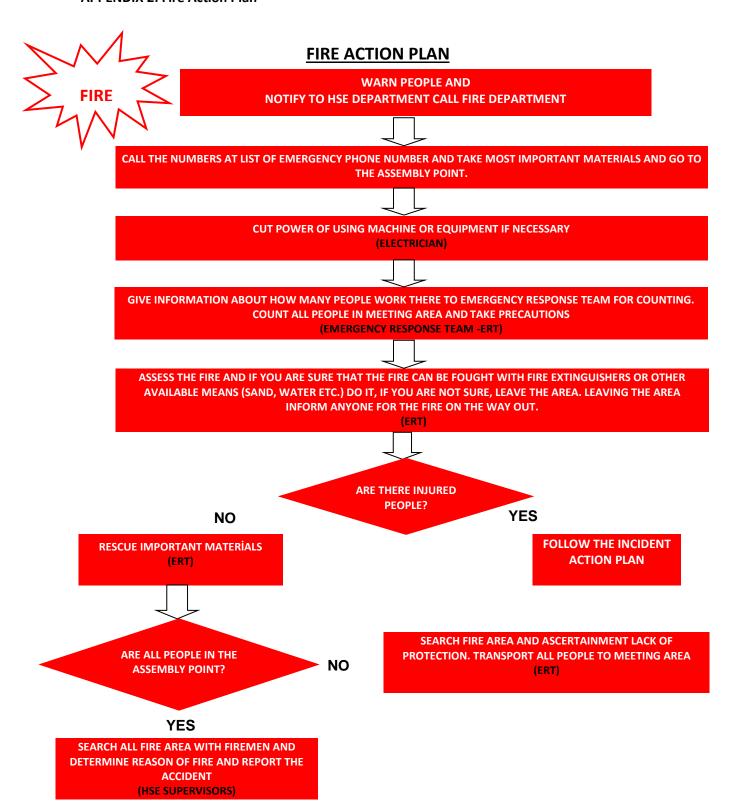
APPENDIX 1: Incident/Accident Action Plan



Document Number : P04 Revision Number : Date : 10.4.2017

EMERGENCY PROCEDURE

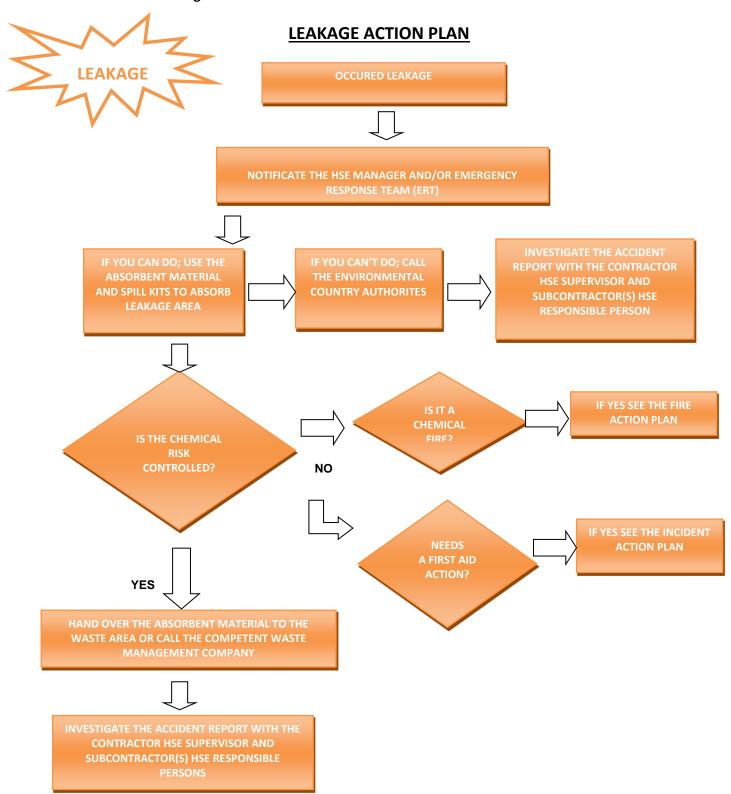
APPENDIX 2: Fire Action Plan



Document Number : P04 Revision Number : Date : 10.4.2017

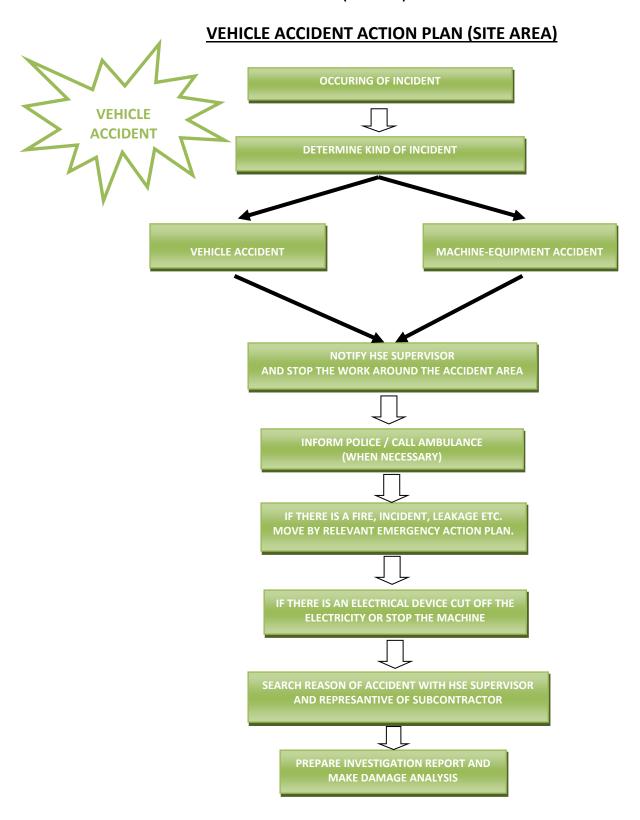
EMERGENCY PROCEDURE

APPENDIX 3: Leakage Action Plan



GHANA BRIDGE POWER PLANT Document Number: Date: 10.4.2017

APPENDIX 4: Vehicle Accident Action Plan (Site Area)



Document Number: P04 Revision Number: Date: 10.4.2017

EMERGENCY PROCEDURE

APPENDIX 5: Emergency Phone Numbers

PROJECT EMERGENCY PHONE LIST			
Ref No. FUNCTION/SERVICE	NAME	PHONE NUMBER	
1. CONTRACTOR'S SITE GENERAL			
SITE MANAGER-Civil Engineer/ Emergency response leader Antonios Papoutsopoulos (+30) 6951855030			
HSE SUPERVISOR/ ERT Team Leader	Apostolos Sgouros	(+30) 697 656 5497	
Survey Engineer/ ERT Team	George Vasileiou	(+30) 6978180537	
QA/QC Engineer / ERT Team	Vasileios Eleftheriou	(+30) 6977275826	
Electrical Engineer / ERT Team	Seyram Amewudah	+233 (0) 501524563	
SITE MEDICAL SERVICE/ Medical Staff	To be added later	To be added later	

2. EXTERNAL SERVICES

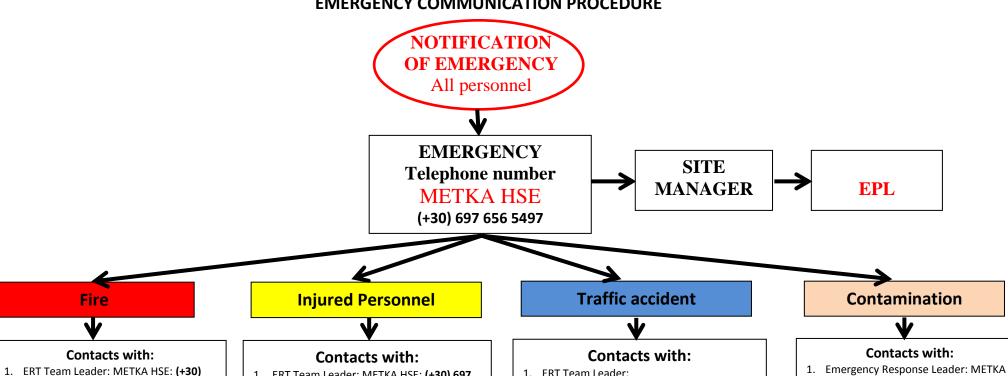
E1	EMERGENCY RESPONSE SYSTEM (ERS)	112
E2	POLICE	191
E3	FIRE BRIGADE	192/999
E4	AMBULANCE	193
E5	WARA HOSPITAL/AMBULANCE SERVICE	0302-781258
E6	NATIONAL DISASTER MANAGEMENT	024-4508351/
	ORGANIZATION(NADMO) - ACCRA	0302-762593
E7	POISON CENTER	0302-238626
E8	GHANA NUCLEAR REGULATORY AUTHORITY (GNRA)	030 3965928

GHANA BRIDGE POWER PLANT Document Number : P04 Revision Number : 1 Date : 10.4.2017 EMERGENCY PROCEDURE

APPENDIX 6: Emergency Communication Procedure



GHANA BRIDGE POWER PLANT PROJECT EMERGENCY COMMUNICATION PROCEDURE



- ERT Team Leader: METKA HSE: (+30)
 697 656 5497
- 2. Fire Brigade: 192/999
- 3. Site Medical Service: To be added later
- 4. Emergency Response Leader: Site Manager: (+30) 6951855030
- 1. ERT Team Leader: METKA HSE: (+30) 697 656 5497
- 2. Site Medical Service: To be added later
- 3. Emergency Response Leader: Site Manager: (+30) 6951855030

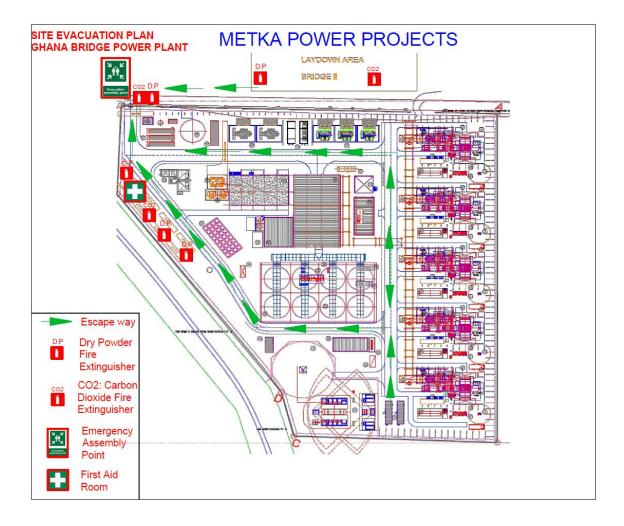
- 1. ERT Team Leader: METKA HSE: (+30) 697 656 5497
- 2. Site Medical Service: To be added later
- 3. Emergency Response Leader: Site Manager: (+30) 6951855030
- 4. Police department: 191

- Emergency Response Leader: METKA Site Manager: (+30) 6951855030
- 2. ERT Team Leader: METKA HSE: (+30) 697 656 5497

Document Number : P04 **Revision Number :** 1 **Date :** 10.4.2017

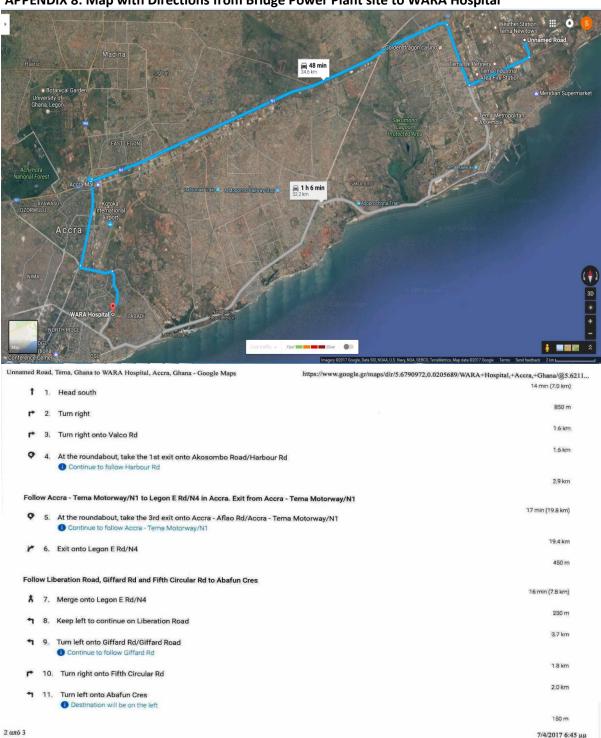
EMERGENCY PROCEDURE

APPENDIX 7: Evacuation Plan



Document Number : P04 Revision Number : Date : 10.4.2017

APPENDIX 8: Map with Directions from Bridge Power Plant site to WARA Hospital

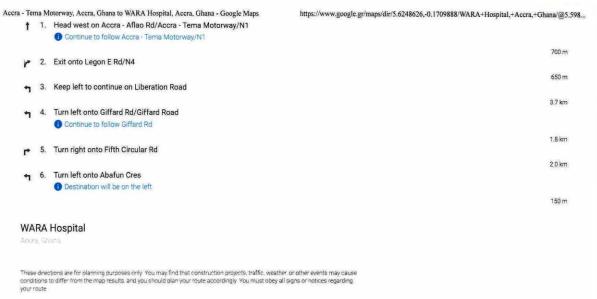


Document Number : P04 Revision Number : Date : 10.4.2017

EMERGENCY PROCEDURE

Map with Directions from Accra-Aflao Rd/Accra-Tema motorway /N1 to WARA Hospital (in detail the route inside Accra)





Document Number: P04 Revision Number: Date: 10.4.2017

EMERGENCY PROCEDURE

APPENDIX 9: Use of Fire Extinguisher

CLASSES OF FIRES	TYPES OF FIRES	SYMBOL
A	Wood, paper, fabric, plastic, and most kinds of trash.	,,, <mark>Α</mark>
В	Flammable liquids (for example,gasoline).	₹ B
С	Burning gases (for example,natural gas).	» <mark>C</mark>
D	Combustible metals * such as magnesium, potassium, titanium, and zirconium. * Exception of the metals that burn in contact with air or water (for example, sodium).	والخ
E	Fires involving potentially energized electrical equipment.	E
F	Unsaturated cooking oils in well insulated cooking appliances located in commercial kitchens.	F

Note: The respective type of fire extinguisher shall be used for each fire category.

Document Number : P04 Revision Number : Date : 10.4.2017

