

# **EMERGENCY RESPONSE PLAN LEGUAN SOLAR PV FARM**



March 2, 2023

**CONSULTANCY FOR THE DEVELOPMENT OF DRMP AND  
EMERGENCY RESPOSNE PLAN FOR SOLAR PV FARM AT LEGUAN,  
GUYANA**



**Submitted to:**  
Inter-American Bank



**Prepared By:**  
CEAC Solutions Ltd

## Table of Contents

1	Emergency Contact List.....	6
2	INTRODUCTION.....	7
2.1	Purpose of the Plan.....	7
2.2	Objectives of the Plan .....	7
2.3	Scope of the Plan .....	7
2.3.1	Geographic Scope .....	7
2.3.2	Systemic Scope.....	7
3	Authorities and References.....	8
3.1	GUYANA FLOOD RESPONSE PLAN.....	8
3.2	National Multi-hazard disaster preparedness and response plan - guyana .....	8
4	Assumptions.....	9
5	GEA’S RESPONSE FRAMEWORK .....	9
6	DISASTER PREPAREDNESS AND EMERGENCY PLANNING Committee .....	9
6.1	Purpose of the Committee.....	9
6.2	Composition of the Committee .....	9
6.3	Role of Team Members.....	10
6.4	The Functions of the Committee .....	13
6.4.1	Preparedness and Response Planning .....	13
6.4.2	Hazard Identification, Evaluation and Mitigation .....	13
6.4.3	Information and Education .....	13
7	Resources/Supplies and Equipment .....	14
8	Response Priorities .....	15
9	Levels of Emergencies/Disaster .....	15
10	Preparedness Procedures .....	16
10.1	Protection of Vital Records .....	17
10.1.1	Documents Classified as Vital Records .....	17
10.1.2	Assembly, Duplication and Storage of Vital Records .....	17
11	Activation and Deactivation Procedures .....	18
11.1	Activation .....	18
11.2	Deactivation Procedures.....	18
12	INTERNAL AND EXTERNAL Notification Procedures .....	18
12.1	Events with Warning/Slow On-set Hazards .....	18

12.2	Events with No Warning/Rapid Onset Events.....	19
13	Response Teams .....	20
13.1	Call Out Procedures for the Emergency Response Team .....	21
13.2	Emergency Coordination .....	21
13.3	Training and Certification of the Emergency Response Team.....	22
13.4	Communication Procedures .....	23
13.4.1	GEA to the Media .....	23
13.4.2	GEA TO External Stakeholders .....	23
13.4.3	GEA to Staff .....	23
13.5	Damage Assessment .....	23
13.5.1	Damage Assessment Procedures .....	23
13.5.2	Phases of Damage Assessment .....	24
14	Evacuation Procedures .....	26
14.1	Returning to the Building .....	27
14.2	Evacuation Routes.....	27
15	Maintaining the Plan .....	28
15.1	Revisions and Updates .....	28
15.1.1	After Every Major Event.....	28
15.1.2	Every 3 years .....	28
15.1.3	After a Simulation Exercise .....	28
15.2	Testing Through Simulation Exercises .....	29
Annex A –	Standard Operating Procedures for Fire.....	30
15.3	BEORE the Fire/Fire Preparedness.....	30
15.3.1	Fire Hazard Inspection .....	30
15.3.2	Fire Protection System and Fire Safety plan .....	30
15.3.3	Training .....	30
15.3.4	Fire Exits .....	31
15.3.5	If you hear the fire alarm .....	31
15.3.6	After the fire.....	31
ANNEX B –	FLOOD EMERGENCY RESPONSE PROCEDURES.....	32
15.4	Preparedness .....	32
15.5	WARNINGS AND NOTIFICATIONS .....	33

15.5.1	Flash Flood Watch - Be Prepared (Corresponds to code orange on the Common Alerting Protocol).33	
15.5.2	Flood Warning – Take Action (Corresponds to Red on the CAP).....	33
15.6	Flood Recovery.....	34
	ANNEX C – AFTERACTION REVIEW FORM.....	35
16	APPENDIX D – EVACUATION ROUTES .....	37

*This plan is being approved as the Emergency Response Plan for the GEA solar PV plant located at Leguan, Guyana. The plan is to provide direction and coordination for responding to emergencies and hazard events that threaten or impact Leguan.*

.....

CEO,  
Guyana Energy Agency

.....

Date

.....

Safety Manager,  
Guyana Energy Agency

.....

Date

## 1 EMERGENCY CONTACT LIST

Name and Title	Role in the Plan	Address	Telephone	Email
<b>Internal Contact Card</b>				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
<b>External Contact Card</b>				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				
TBD				

NB: TBD: to be determined

## 2 INTRODUCTION

The Guyana Energy Agency's (GEA) Solar PV farm is implemented under the Guyana Utility Scale Solar Photovoltaic Program (GUYSOL) which seeks to increase the level of renewable energy in the electricity generation matrix and will be implemented through Inter-American Development Bank (IDB) funding. One of the sites selected for the project is located on the island of Leguan, along the left bank of the Essequibo River.

Hazard assessments (erosion, flood, wind, sea level rise etc) and environmental and social assessments were conducted for the site revealed that there were potential hazard that could impact the site, warranting a Disaster Risk management Plan and Emergency response Plan (ERP).

The aim of the ERP is to identify response procedures that will save lives and minimize damage to property.

### 2.1 PURPOSE OF THE PLAN

The purpose of the emergency response plan is to establish procedures and an organisational hierarchy for the GEA's response to emergencies that occur on the island of Leguan, Guyana and specifically at the GEA solar PV farm. The plan guides GEA's response personnel in their effort to save lives and minimize damage to property.

### 2.2 OBJECTIVES OF THE PLAN

The objectives of the Emergency Response Plan are to:

- A. Carry out actions to prevent fatalities and injuries
- B. Carry out actions to reduce damage to property
- C. Identify and establish partnerships with response agencies
- D. Clarify roles and responsibilities for a coordinated response
- E. Understand what a coordinated response looks like

### 2.3 SCOPE OF THE PLAN

#### 2.3.1 GEOGRAPHIC SCOPE

The plan applies to the coordination of response to a hazard event (human induced or natural), regardless of its magnitude, type, or complexity, which occurs on GEA's solar PV farm on the island of Leguan.

#### 2.3.2 SYSTEMIC SCOPE

The plan relates to the response phase of the disaster risk management framework but heavily relies upon the preparedness phase where all the coordination and preparation for response takes place. The response phase is the phase in which a hazard event occurs warranting the mobilisation, deployment,

and coordination of resources to provide emergency services and public assistance during or immediately after the occurrence of a hazard to save lives, reduce health impacts, ensure public safety, and meet the basic subsistence needs of the people affected.

### 3 AUTHORITIES AND REFERENCES

#### 3.1 GUYANA FLOOD RESPONSE PLAN

The aim of the Guyana Flood Preparedness and Response Plan is to ensure systematic, timely management of a situation in an appropriate manner and responding to floods in a coordinated manner. The plan sets out the four phases for the effective management of floods - planning and preparation, preparedness, response and recovery.

The plan identifies the protocols for early warning and alert, which includes disseminating to the public for the necessary actions to be taken. Public advisories will describe the event (what, where, when, how, who) and prescribe the actions to be taken. This alert will trigger the activation of emergency plans for organisations. The Regional Democratic Councils will manage management of the emergency at the Regional Level. During a disaster situation, their role includes coordinating with public and private sector to mobilise resources and deploy for effective response.

#### 3.2 NATIONAL MULTI-HAZARD DISASTER PREPAREDNESS AND RESPONSE PLAN - GUYANA

Guyana's NMHPRP incorporate all disaster management activities related to response and preparedness. It presents a framework and establishes the coordination mechanism for emergency response for various sectors including public and private sector and civil society.

The plan outlines the institutional framework for disaster management in Guyana, This framework comprises three layers:

1. **National level** – policy level consisting of the Office of the President who also leads policy decisions regarding disaster management. This level is also supported by the Cabinet and specific Cabinet Committee established for DRM.
2. **Technical Level** – This level is led by the Coordinator for the CDC. Guidance is provided by a Disaster Risk Reduction Platform whose membership comprises the Private Sector Commission, multi-lateral partners, humanitarian organizations and key response agencies.
3. **Community/local Level** –

The national preparedness and response structure includes six committees convened around six thematic areas, one of which is Utilities and Infrastructure and Transport. GPL is a member of this committee.



## 4 ASSUMPTIONS

There are other assumptions underpinning this plan:

- a) Adequate resources (personnel, material and financial) will be available for the response
- b) Staff and other response personnel have adequate training to mount a safe and effective response
- c) The site will be accessible to response personnel to implement lifesaving and property protection actions
- d) There is minimal risks to the response personnel carrying out response activities

## 5 GEA'S RESPONSE FRAMEWORK

## 6 DISASTER PREPAREDNESS AND EMERGENCY PLANNING COMMITTEE

### 6.1 PURPOSE OF THE COMMITTEE

The GEA Disaster Preparedness and Emergency Response Committee will undertake the necessary planning BEFORE an incident, coordinate and implement response DURING incidents and coordinate clean up and restoration AFTER an incident. The committee:

- Guides the coordination and makes decisions about the response operation
- Provides technical guidelines for the correct functioning of the response structure.
- Assesses the overall performance after every operation and identify areas for improvement.

### 6.2 COMPOSITION OF THE COMMITTEE

The following persons are members of the committee.

Roles	Role	Responsibility
Chairperson		
Deputy Chairperson		
Safety Monitor		
Secretary		
Information Officer		
Safety Manager		
Incident Commander		
Chief Safety Warden		

### 6.3 ROLE OF TEAM MEMBERS

Committee Members	Responsibilities
<b>Chairperson</b>	<ul style="list-style-type: none"> <li>• Chair the quarterly meetings - lead discussions; highlight important points; clarify misunderstandings; encourage full and constructive participation by the all members so that decisions on issues relating to disaster management reflect consensus; pace the meeting; and refocus where necessary to ensure it runs within the allotted time.</li> <li>• Prepare meeting agenda in conjunction with the secretary and ensure minutes are properly drafted and issued prior to the next meeting.</li> <li>• Ensure a record of all decisions is logged; assist secretary where necessary; approve the formal minutes of the meeting after they have been formatted.</li> <li>• Ensure that the preparedness and response programme for the GUYSQL agreed by the committee is implemented.</li> <li>• Perform ongoing evaluation of the effectiveness of the committee.</li> <li>• Review and approve documents shared by the Information Officer and the Safety Manager</li> <li>• Communicate with the media during a crisis</li> <li>• Activate and de-activate the plan</li> </ul>
<b>Deputy Chairman</b>	<ul style="list-style-type: none"> <li>• In the chairman's absence, the deputy chairman should chair meetings and carry-out any other executive roles and functions of the chairman.</li> <li>• Support the chairman in conducting meetings in an organized manner.</li> <li>• Perform certain special tasks as delegated by the Chairperson.</li> <li>• Support and encourage the committee in carrying out its aims and objectives.</li> </ul>
<b>Safety Manager</b>	<ul style="list-style-type: none"> <li>• Provide technical advice to the Disaster Preparedness and Emergency Response Committee</li> <li>• Plan, implement and monitor the disaster preparedness and response programme for the GUYSQL</li> <li>• Ensure activities are implemented in accordance with the necessary guidelines and standards</li> <li>• Monitor to ensure staff and visitor conformity with safety guidelines</li> <li>• Investigate and maintain a log of all incidents</li> </ul>

Committee Members	Responsibilities
	<ul style="list-style-type: none"> <li>• Coordinate the necessary trainings to build capacity for the implementation of the plan</li> <li>• Ensure all resources are maintained in a safe condition</li> <li>• Coordinate the reactivation and restoration of operations after the occurrence of a hazard</li> <li>• Request resources to recover and continue operations after an emergency</li> <li>• Coordinate the compilation of reports and present them to the committee</li> </ul>
<b>Safety Monitor</b>	<ul style="list-style-type: none"> <li>• Supports the Safety Manager in developing and implementing the disaster preparedness and response programme</li> <li>• Periodically tours and monitors the facility to identify any existing or potential hazards/threats that could cause staff or the facility to become vulnerable such as:               <ul style="list-style-type: none"> <li>○ Blocked exits</li> <li>○ Alarm defects</li> <li>○ Missing signs</li> <li>○ Unsecured items</li> <li>○ Structural defects</li> </ul> </li> <li>• Review new studies prepared on the general area and assess any implications for the facility</li> <li>• Monitors to ensure all threats are under control or have been mitigated</li> <li>• Monitor bulletins and updates from local and national authorities on any impending hazard and notify the safety manager</li> <li>• On an ad hoc basis observe staff and visitors for compliance with safety procedures and report breaches or non-compliance to the Safety Manager</li> <li>• Compile information on safety breaches, existing or potential threats and submit a report to the Safety Manager</li> </ul>
<b>Local Incident Commander</b>	<ul style="list-style-type: none"> <li>• Triggers the appropriate response as soon as an emergency has occurred at the facility</li> <li>• Coordinates the response team to deliver first aid, search and rescue, damage assessment and other response function as needed</li> <li>• Contacts external agency to request assistance or to update them</li> </ul>

Committee Members	Responsibilities
	<ul style="list-style-type: none"> <li>• Prepares a report of the incident using the prescribed incident log</li> <li>• Activates communication procedures for internal and external stakeholders and responders</li> <li>• Issues the all clear for localized incidents and deactivates response teams</li> </ul>
<b>Safety Wardens</b>	<ul style="list-style-type: none"> <li>• In the event of an emergency, ensure the safe evacuation of visitors and staff to the designated assembly points using designated emergency exit routes and according to the prescribed evacuation procedures</li> <li>• Prepare and submit a report to the Incident commander on the evacuation process and assembly of staff and visitors</li> <li>• Report to the incident commander any further action that needs to be taken to achieve further safety of staff and visitors</li> <li>• Carry out any other duties requested by the incident Commander</li> </ul> <p><b>Damage Assessment</b></p> <ul style="list-style-type: none"> <li>• Assess the impact of hazards within the prescribed timeframe using the prescribed form</li> </ul> <p><b>Emergency Response</b></p> <ul style="list-style-type: none"> <li>• Alert the incident commander and</li> <li>• Administer first aid to persons who have sustained injury</li> <li>• Provide water-based rescue for boat tours</li> <li>• Search and rescue persons trapped or left behind during an incident</li> </ul>
<b>Information Officer</b>	<ul style="list-style-type: none"> <li>• Rapidly receive information from the Safety Manager regarding the status of an incident</li> <li>• Become familiar with the various types of reports that are to be prepared</li> <li>• Translate information from the incident and other reports into information appropriate for internal and external stakeholder needs</li> <li>• Draft, edit and finalize information report for approval by the chairman</li> <li>• Contact external stakeholders and update them on the status of an incident including the CDC and its regional office, Leguan Fire Department, police and the community</li> <li>• Keep staff informed on an incidents and any actions required from them</li> </ul>

Committee Members	Responsibilities
	<ul style="list-style-type: none"> <li>• Assist in the coordination and facilitation of capacity building training</li> <li>• Prepare training reports</li> </ul>

## 6.4 THE FUNCTIONS OF THE COMMITTEE

The functions of the GEA Disaster Preparedness and Emergency Response Committee are:

### 6.4.1 PREPAREDNESS AND RESPONSE PLANNING

- Develop and approve an annual work plan / programme for maintaining a satisfactory level of preparedness and adequate response
- Maintain the plan, ensuring that it is regularly tested and updated
- Regularly conduct meetings of the Committee to readily identify and remedy issues that may affect the facility
- Monitor, evaluate and keep a track of progress with preparedness and response
- Facilitate the provision of centralized coordination and control of disaster response until external help arrives
- Maintain communication with the CDC's Regional Office to keep abreast of decisions that may affect the risk reduction programme of the solar PV farm
- Establish and maintain an emergency contact list

### 6.4.2 HAZARD IDENTIFICATION, EVALUATION AND MITIGATION

- Keep abreast of hazards via relevant agencies, media and the internet; and prioritize in the work plan natural, man-made (and technological) hazards that threaten the PV farm
- Review vulnerability assessments conducted for the area and identify any new or emerging threats
- Implement disaster risk reduction strategies to ensure the safety of the facility, staff and visitors
- Monitor decisions made by the CDC and assess implications for the solar PV farm;

### 6.4.3 INFORMATION AND EDUCATION

- Undertake training and capacity building of staff and community to ensure they are able to satisfactorily execute their roles in the plan
- Keep staff members aware of committee activities
- Respond to concerns from staff, visitors and external agencies
- Establish and maintain a communication network internally and externally with partners to ensure readiness for response;
- Maintain communication with the Leguan Community DRM Group, Regional Office and CDC to keep abreast of decisions that may affect the risk reduction programme of the facility

## 7 RESOURCES/SUPPLIES AND EQUIPMENT

The committee will ensure that all the necessary response resources are in place and functioning

Resources	Location	Contact Person
First aid kit		Safety Manager
Fire extinguishers		
Water Rescue Aides: <ul style="list-style-type: none"> <li>Life Vests</li> <li>Life Ring</li> <li>Towing Ropes</li> <li>Rubber raft</li> </ul>		Safety Manager
Handheld Radios		Safety Manager
Sandbags		Safety Manager
Storm shutters/ply board		Safety Manager
Masking tape		Safety Manager
Duct tape		Safety Manager
Cellular phone charging bank		Safety Manager
Plastic sheeting and tarpaulin		Safety Manager
Water boots and rain coats		Safety Manager
Flashlight and lantern		Safety Manager
Battery operated radio		Safety Manager
Extra batteries		
Cleaning and sanitizing products: <ul style="list-style-type: none"> <li>Chlorine bleach</li> <li>Disinfectant</li> <li>Sanitizers</li> <li>Mops</li> <li>Garbage bags</li> <li>Soap/detergent</li> <li>rake</li> </ul>		Safety Manager
Latex gloves		Safety Manager
Disposable recyclable cups, plates and utensils		Safety Manager
Utility knife		Safety Manager
Insect repellent		Safety Manager

## 8 RESPONSE PRIORITIES

This plan provides standardised response goals for the prioritisation of response actions. These response goals will be used to help guide all decisions made by GEA in response to an emergency or disaster situation. Where resources permit, these response goals should be pursued concurrently. The standardised response goals are as follows:

### Priority 1 - Protect the safety of all responders

- Provision for physical and mental health

### Priority 2 - Protect and preserve life

- Provision of urgent emergency needs including rescue and emergency medical triage and care, issuing of information and warnings.

### Priority 3 – Protection of assets

- Secure and protect critical assets

## 9 LEVELS OF EMERGENCIES/DISASTER

GEA will adapt the levels of disaster as set out in the Guyana Multi-hazard Disaster Preparedness and Response Plan.

Level	CDC Level	GEA Level
Level 1	Localized emergency events that can be managed within the regular operating mode of the protective and emergency services. Can be managed by the RDC with its own resources	Localized emergency events that can be managed within the regular operating mode and with GEA's own resources
Level 2	Emergency/disaster events that overwhelm the capacity of the resources in a region, but which do not overwhelm the capacity of the national resources to respond and recover (such zones of impact can be declared Disaster Areas).	Emergency/disaster events that overwhelm the capacity of GEA's resources, but which do not overwhelm the capacity of the resources on Leguan to respond. GEA will require assistance from external stakeholders on Leguan, the Regional Democratic Council (RDC) or from mainland.
Level 3	Disaster events that overwhelm the capacity of the national resources to respond and recover (such an event may be designated as a National Disaster)	Disaster events that overwhelm the capacity of the Guyana's national resources to respond and recover (such an event may be designated as a National Disaster). GEA will seek assistance from outside the country.

## 10 PREPAREDNESS PROCEDURES

Actions	Summary/Description	Responsibility
Identify and Monitor possible threats to the facility	Identify safety issues, structural and non-structural hazards and monitor external information to identify any potential threats to safety	Safety Monitor
Develop a programme to reduce vulnerabilities identified	A programme should be drafted highlighting clear actions and responsibilities for treating with hazards or vulnerabilities identified.	Safety Manager
Convene regular meetings of the committee	The vulnerability reduction programme and general preparedness activities should be discussed during the committee meetings	Chairman of Disaster Preparedness and Emergency Response Committee
Implement the actions in the vulnerability reduction programme	The committee should be kept informed on the actions and track progress and success.	Safety Manager
Review the Emergency Plan and update as needed	See section 8 on plan maintenance. The plan should be reviewed and updated as prescribed	Safety Manager
Maintain an inventory of all equipment and supplies and ensure their maintenance	The resources list should be evaluated to ensure it identifies all the necessary resources for an emergency. Equipment should be checked regularly to ensure they are in good working order.	Safety Manager
Conduct preparedness activities for staff	Orient staff on the emergency preparedness and response plan. Small events can be used as an opportunity to practice the procedures so that they are well rehearsed for a real event.	Information Officer



Actions	Summary/Description	Responsibility
<b>Training and Simulation Exercises</b>	Conduct drills regularly and test other elements of the plan to improve knowledge and awareness of the procedures. This will help make the emergency response more seamless. An After Action Review is to be conducted after each exercise (Annex C)	Safety Manager Information Officer
<b>Establish Evacuation Procedures</b>	Evacuation procedures are necessary to ensure safe and timely evacuation of the facility. Evacuation routes and assembly points should be monitored, marked and regular physical walk through of the evacuation routes (see Annex D) should be done.	Safety Manager

## 10.1 PROTECTION OF VITAL RECORDS

Vital records are classified as those records that are essential for GEA to carry out its core functions. As a result, they must be protected against damage and loss. The Safety Manager will ensure that the following procedures are implemented for the protection of vital records.

### 10.1.1 DOCUMENTS CLASSIFIED AS VITAL RECORDS

The following documents are classified as vital records for the GEA. From time-to-time, the safety manager will recommend additional documents to be classified as vital for inclusion in this list.

- Blueprints of the facility
- Policy manuals - including a coping of this disaster preparedness plans and procedures, checklists and safety manuals
- Instructions for the safe operation of equipment
- Staff and Visitor logs – For security and safety purposes
- Financial records

### 10.1.2 ASSEMBLY, DUPLICATION AND STORAGE OF VITAL RECORDS

All vital records will be assembled and duplicated. Duplicates will be made:

- a) Electronically - Duplicate copies of the vital records will be kept electronically and stored in the cloud or in at a safe alternate location.
- b) Photocopied – Hard copy duplicates can be made and stored in a safe water-tight location on site.

## PART C – EMERGENCY RESPONSE

The emergency response component of this plan involves actions and procedures to protect against loss of life and damage to the PBDC assets when faced with an emergency situation or a hazard.

### 11 ACTIVATION AND DEACTIVATION PROCEDURES

#### 11.1 ACTIVATION

The Plan is activated in two ways:

1. **By the Safety Manager** – In the case of a rapid onset hazard where there is little or no warning, the Safety Manager Upon notification of an incident at the solar PV farm, will activate the plan and notify the chairman of the committee and the RDC
2. **By the Chairperson** – Upon notification of an impending hazard, the Chairperson, upon advice from the Safety Manager, will activate the plan.

#### 11.2 DEACTIVATION PROCEDURES

The plan will be de-activated by the Safety Manager as soon as it is safe to do so after the all clear is given OR as soon as all response actions have been satisfactorily completed.

### 12 INTERNAL AND EXTERNAL NOTIFICATION PROCEDURES

#### 12.1 EVENTS WITH WARNING/SLOW ON-SET HAZARDS

The following procedures will be adopted for internal and external notification. The Safety Manager will use multiple means to send the notification – emails, telephone and handheld radios.

Slow Onset Hazards	Procedures
Internal Notification	The Safety Monitor monitors forecasts or warnings and communicates updates/warnings from official sources to the Safety Manager

Slow Onset Hazards	Procedures
	The Safety Manager shares the notification with the committee and the response team members.
	The team assesses and puts suitable control for the hazard in place
<b>External Notification</b>	The Safety Manager notifies the Fire Department, hospital, police and the RDC of the hazard
	<p>In notifying the responder, the Safety Manager should relay the following information:</p> <ul style="list-style-type: none"> <li>○ Hazard that has occurred</li> <li>○ Specific location of the incident/hazard</li> <li>○ Description of the extent of the hazard</li> <li>○ Contact person (name and direct telephone number)</li> <li>○ Actions already taken, if any</li> <li>○ Any other information that may be useful in the response</li> </ul>

## 12.2 EVENTS WITH NO WARNING/RAPID ONSET EVENTS

Events with no warnings are handled in the most expeditious manner. In case of a fire, the alarm will sound. This will be the notification that the event is occurring and all persons (visitors and staff) will respond according to the fire response procedures.

In the case of an earthquake, official notification will be received after the event has taken place, if communication mechanisms are still operable. The earthquake itself should be taken as notification of the incident.

Rapid Onset Hazards	Procedures
<b>Internal Notification</b>	The Safety Manager notifies the chairman and response team of the occurrence of an incident
	The Safety Manager shares the notification with the committee and the response team members.
	The team assesses and applies a suitable control for the hazard
<b>External Notification</b>	If the team is unable to identify a suitable control measure, the Safety Manager notifies the relevant emergency responder of the hazard:
	<ul style="list-style-type: none"> <li>○ In the case of a fire – Notify the Jamaica Fire Brigade</li> </ul>

Rapid Onset Hazards	Procedures
	<ul style="list-style-type: none"> <li>○ In the case of a security threat – Call the nearest police station as listed in contact list</li> <li>○ In the case of oil spill, chemical spill or any environmental hazards – contact NEPA and the Parish Disaster Coordinator</li> <li>○ In the case of a health emergency – Transport the injured to the nearest medical facility</li> </ul>
	<p>In notifying the responder, the Safety Manager should relay the following information:</p> <ul style="list-style-type: none"> <li>○ Specific location of the incident/hazard</li> <li>○ Description of the extent of the hazard</li> <li>○ Contact person (name and direct telephone number)</li> <li>○ Actions already taken, if any</li> <li>○ Any other information that may be useful in the response</li> </ul>

### 13 RESPONSE TEAMS

The emergency response team comprises staff members who have been trained in specific emergency response areas such as first aid/CPR, water rescue, first aid, search and rescue, fire safety and damage assessment. The team is made up of safety wardens from GEA. Their responsibility will include:

1. Dispatching requests for assistance
2. Searching designated buildings to ensure all persons have evacuated
3. Assisting in the evacuation of distressed staff and visitors
4. Providing first aid to people who are injured
5. Supporting emergency responders on the incident scene, if requested
6. Leading emergency response and liaising with emergency responders until they arrive on the scene
7. Preventing further injury to staff and guests
8. Prevent the entry of vehicles and persons to the site during an incident
9. Monitor the entrance and exit of responders and visitors and staff at an incident scene

Role	Lead	Support/Team Members
Incident Commander		
First Aider		
Water/Fire Rescuer		
Damage Assessment Coordinator		
Security Officer		

### 13.1 CALL OUT PROCEDURES FOR THE EMERGENCY RESPONSE TEAM

As soon as the Incident Commander has determined the occurrence of an incident warranting the need for assistance from the Emergency Response Team, the members will be activated. As the persons authorized to approve the deployment of the team, the Safety Manager will keep a contact list of the response team members.

Call out will be warranted only if the team is not present on site during an incident.

### 13.2 EMERGENCY COORDINATION

On the declaration of an emergency, various internal and/or external stakeholders must respond as quickly as possible to bring the situation under control and to save lives and minimize damage. Level 2 and Level 3 events will be coordinated from a central point. The following procedures are to be adopted for emergency Coordination.

Tasks	Description	Responsibility
Identify a suitable location for a command post/command centre	Depending on the nature of the hazard that has occurred, a command post may be necessary. A command post provides a mechanism for responders to converge, monitor and coordinate the response and make ongoing decisions  <b>Level 1 emergencies</b> – It is unlikely that a command post is needed	Safety Manager  Incident Commander
	<b>Level 2 and level 3 emergencies</b> –The Incident commander together with the Safety Manager will determine if a command centre/post is needed. If one is needed, a selection can be made from one of the	Incident Commander  Safety Manager

Tasks	Description	Responsibility
	<p>following options, depending on the type of hazard and risks involved:</p> <ol style="list-style-type: none"> <li>1. GEA's meeting room</li> <li>2. Any available transportation parked a safe distance from the incident site</li> <li>3. Erection of temporary facility using tarpaulin or other materials at a safe distance from the incident site</li> </ol>	
Set-up the command centre	<p>At minimum, the command centre should have the following:</p> <ul style="list-style-type: none"> <li>• Emergency communication device</li> <li>• Whiteboard</li> <li>• Pens/pencils</li> <li>• Notepad</li> <li>• Appropriate response equipment</li> </ul>	Safety Manager

### 13.3 TRAINING AND CERTIFICATION OF THE EMERGENCY RESPONSE TEAM

The Safety Manager will develop a training programme for the Emergency Response Team and will monitor to ensure that all team members maintain up-to-date certification.

The training should also include simulation and drills.

Training Areas	Frequency	Responsibility
Individual Roles and responsibilities in the ERP	<ul style="list-style-type: none"> <li>• Upon recruitment</li> <li>• Annually</li> </ul>	Safety Manager
Notification, warning and communication procedures	<ul style="list-style-type: none"> <li>• Upon recruitment</li> <li>• Annually</li> </ul>	Safety Manager
Emergency Response Procedures	<ul style="list-style-type: none"> <li>• Annually</li> <li>• During drills</li> </ul>	Safety Manager
Fire safety and use of fire safety equipment	<ul style="list-style-type: none"> <li>• Annually</li> </ul>	Safety Manager
First aid	<ul style="list-style-type: none"> <li>• Every two years</li> <li>• Upon staff leaving</li> </ul>	Safety Manager

## **13.4 COMMUNICATION PROCEDURES**

### **13.4.1 GEA TO THE MEDIA**

If a situation arises where the media requests information from GEA on an emergency event, the Chairperson or designated alternative will handle all media communication. The information Officer and Safety Manager will brief the Chairperson and provide the information required. The

### **13.4.2 GEA TO EXTERNAL STAKEHOLDERS**

The following procedures are to be adopted in communicating with external stakeholders before, during or after an emergency event:

- The Information Officer prepares a report from incident reports, damage assessment reports or other reports prepared before, during or after an incident
- The Information Officer submits the report to the chairperson for review
- The chairperson approves the report
- The Information Officer dispatches the report to external stakeholder

### **13.4.3 GEA TO STAFF**

- During the occurrence of an incident, the information Officer will update all staff members at a frequency determined by the Safety Manager based on the nature of the incident
- Staff will direct all queries to the Information Officer

## **13.5 DAMAGE ASSESSMENT**

A post-impact inspection and qualitative and quantitative assessment of the damage will take place. The assessment will take place in two phases using prescribed forms. The following elements will be included in the damage assessment report:

- Equipment and electronic
- Non-structural components
- Structural damage assessment
- Vital records

### **13.5.1 DAMAGE ASSESSMENT PROCEDURES**

#### **13.5.1.1 BEFORE**

All personnel designated as damage assessors must:

- Participate in damage assessment training to become familiar with the process, technique and tools to be used in assessing damage. The Safety manager and Information Officer will

organize these trainings. The RDC may be contacted for assistance with this training, if necessary.

- Receive a briefing and tour from the Safety manager to observe and become familiar with the normal state of the building and amenities and infrastructure
- Become familiar with the damage assessment form(s) (see Annex E) and practice filling them out

#### **13.5.1.2 AFTER**

- Inspect/check the building structure, that is, roof, walls, foundation, etc. and assess the damage
- Classify damage and record the observations on the damage assessment form
- Inspect/check building contents such as machinery, equipment and identify any damage and record them on the form
- Inspect the premises and amenities that comprise the facility and record damage on the form
- Inspect/check the shoreline and protection works and record damage and its possible causes
- Document and bring to the attention of the Incident Commander any possible threats to the facility
- Complete and submit the damage assessment form(s) to the Incident Commander
- Takes photographs and videos as part of the assessment

### **13.5.2 PHASES OF DAMAGE ASSESSMENT**

#### **13.5.2.1 Phase 1 - Initial Damage Assessment**

This is undertaken as soon as the all clear (statement or signal from an authority or authorized person that the danger has passed) is given. It should be completed within 8 hours of the all clear as long as there are no safety issues impeding the assessment. The purpose of this assessment is to identify damage that could pose safety risks and prevent the re-occupation and use of the building or the facility.

- a. Check that it is safe to conduct a damage assessment. The following can pose safety risk after the occurrence of a hazard:
  - i. Power lines or utility poles
  - ii. Wild animals (crocodiles etc.)
  - iii. Blocked roads(main road or access road to the property)
  - iv. Objects that may have become loose or fallen
  - v. Flooding on the site or surrounding area



- b. Take photographs or video-tape the damage
- c. Separate damage from undamaged items and keep a record of each
- d. Conduct a detailed inspection and identify areas that are damaged
- e. Determine if the building or facility can be safely occupied. If the authorities are present on the scene, ask their opinion on the safety of the building or site
- f. Protect undamaged items by making urgent repairs (even if temporary)
- g. Prepare a damage assessment report of the initial damage observed

### 13.5.2.2 Phase 2 - Detailed Assessment

The purpose of this assessment is to determine recovery priorities and to guide the development of a recovery programme to ensure that the building/facility and its assets are better than or equal to what they were before.

- a. Undertake a detailed damage assessment of the facility using a prescribed form to assess damage to each building and their components
- b. Assess machinery, equipment, panels, connections, batteries etc
- c. Request external assistance and expertise if necessary to guarantee a comprehensive assessment

### 13.5.2.3 Reporting Arrangements for Damage Assessment Reports

- 1. The assessment teams will conduct the assessment and submit a report to the Incident Commander
- 2. The Incident Commander compiles the data, and prepares a report
- 3. The report is submitted to the Committee Chairperson
- 4. A report is submitted to the relevant authorities as necessary (GPL, CDC/RDC, EPA) by the Chairperson or his/her designate

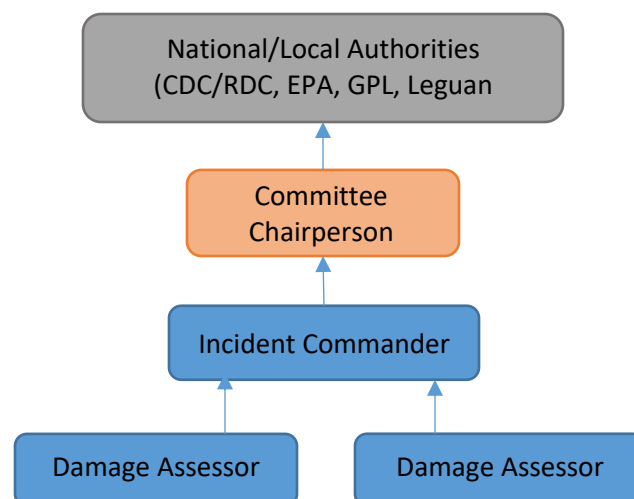


Figure 2: The Reporting Arrangement for Damage Assessment

## 14 EVACUATION PROCEDURES

The following team members will perform the following roles during an emergency or incident at GEA:

### Incident Commander

- Activate the emergency response team
- Evaluate the severity and potential impact, response requirements and safety concerns and contact the emergency responders and provide instructions to wardens based on this assessment
- Communicate with emergency responders on the safety of persons at the incident site

### Safety Wardens

- At the sound of the alarm or occurrence of a hazard, safely stop working. Do not panic.
- Guide visitors and staff to leave the building through the designated exit OR through the nearest exit door with an EXIT sign
- In the process of leaving the building, take staff registers and visitor logs
- On the way out, check all accessible spaces along the route such as bathrooms and enclosed spaces to ensure that all persons have evacuated
- Direct persons to the designated assembly area
- Provide Safety instruction to persons at the Assembly Point
- Perform a roll call to ensure that all persons have safely exited the building
- Verify and report any unaccounted persons to emergency responders on the scene and the Incident Commander
- Upon the instruction of the Incident Commander or Emergency Responder, perform a search for missing person(s) if it is safe to do so

### Response Teams

- Monitor to identify persons who have sustained injuries and provide first aid as needed
- Provide water rescue
- Upon instructions from the Incident Commander or Emergency Responder search for and rescue persons trapped or left behind after an evacuation

### 14.1 RETURNING TO THE BUILDING

- DO NOT re-enter the building until authorized to do so
- Remain in the assembly area after the roll call and await further instructions from the Safety Wardens or Emergency Responders

### 14.2 EVACUATION ROUTES

Annex F shows the evacuation routes internally within the main building and externally to the assembly point and public emergency shelter. The designated routes to each Assembly Point is described in each table below.

Evacuation will take place for four scenarios:

#### Scenario 1 –A flood that impacts the entire site or sections of the site and roadway

Primary Route	Rubber raft will be used as the means of transportation for evacuation. The route will be the main road or any land space that is navigable
Assembly Point	Leguan Secondary School (Proposed Shelter)

#### Scenario 2 – Fire that is confined to the site

Primary Route	Exit the site travelling along the roadway to a safe zone outside of the 250 m buffer
Assembly Point	Safe zone <b>outside</b> of the 250m buffer zone on the evacuation map

#### Scenario 3 – Fire that spreads to adjoining lands

Primary Route	Exit the site travelling along the roadway to a safe zone outside the 250m buffer
Assembly Point	Safe zone <b>outside</b> of the 250m buffer zone on the evacuation map

#### Scenario 4 – Major event necessitating total evacuation of Leguan

Primary Route	Proceed via the roadway by rubber raft or road transportation to the port at the capital or to a safe beach
---------------	---

	Use designated boats (if provided) for evacuation to mainland or use the safest available water craft
Assembly Point	A public emergency shelter designated by CDC or RDC

## 15 MAINTAINING THE PLAN

### 15.1 REVISIONS AND UPDATES

The plan will be updated to ensure the most efficient system of coordination is in place and to ensure it takes account of changes that may have taken place. As such, the plan will be updated under the following scenarios:

#### 15.1.1 AFTER EVERY MAJOR EVENT

The plan will be reviewed and updated after every major event. To facilitate this the Safety Manager will conduct an After-Action Review (AAR) after every major event (see Annex F for AAR template). The purpose of the AAR is to:

- To document lessons learnt from activities and response events
- Identify successes and areas for improvement
- To identify areas of the plan that need improvements or need to be updated:

#### 15.1.2 EVERY 3 YEARS

The plan may become outdated due to changes in procedures and techniques, changes in institutional or organizational structures, or other changes that affect the responsibilities, roles or resources in the plan. To ensure the plan stays current, Safety Manager will undertake a major review of the plan every 3 years.

#### 15.1.3 AFTER A SIMULATION EXERCISE

A simulation exercise trains people to apply procedures and plans, become familiar with technical systems and locations and evaluate the appropriateness of procedures. When exercises are conducted, and gaps are revealed, the plans will be updated to reflect changes made based on the simulation exercise.

##### When to update the plan:

- I. After Every major event
- II. Every 5 years
- III. After a simulation exercise

## 15.2 TESTING THROUGH SIMULATION EXERCISES

GEA's Safety Manager will use various types simulation exercises to test various aspects of the plan. Testing and simulation will be guided by the following schedule.

### Testing through Simulation Exercises

Type of Exercise	Description/Purpose	Plan Components	Frequency
Orientation Seminar	Used to provide information and an introduction to the plan and its procedures	<ul style="list-style-type: none"> <li>General plan</li> <li>Specific Roles and Responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>Each new recruitment</li> <li>Annually</li> </ul>
Table top/discussion-based exercise	Table tops are designed for the examination of operational plans, problem identification and problem solving. It is used to analyse a specific situation in an informal, stress-free environment.	To be determined by Safety Manager	TBD based on annual programme
Drills	To test a specific operation or function usually involving the deployment of personnel and equipment in more than one locations	Fire SOP's	Annually or at such regularity as prescribed by the regulatory authority
		Earthquake SOP's	Annually
Functional	This is a fully simulated interactive exercise that tests the capability of an organization to respond to a simulated event. This exercise focuses on the coordination of multiple functions or organizations and takes place in an Emergency Operations Centre. The functional exercise strives for realism, short of actual deployment of equipment and personnel	To be determined by the Safety Manager	TBD based on annual programme

## ANNEX A – STANDARD OPERATING PROCEDURES FOR FIRE

Fires can be devastating because they can cause damage and injury and loss of life. They can occur quite suddenly and therefore warrants adequate preparation and an efficient response.

The risk of fires is low, however, it is still possible and as such, these specific procedures are being put in place to minimize impacts. Sources of fire at the facility is mainly electrical.

### 15.3 BEFORE THE FIRE/FIRE PREPAREDNESS

The following fire preparedness procedures should be employed before a fire occurs:

#### 15.3.1 FIRE HAZARD INSPECTION

The Safety Monitor should:

- Ensure all flammable or combustible materials are stored and used in a safe manner. GEA does not store or use combustible materials, however, should this occur at any time the necessary precautions should be taken.

#### 15.3.2 FIRE PROTECTION SYSTEM AND FIRE SAFETY PLAN

- Inspect all fire alarms and fire extinguishers and keep a log of the inspections
- Access to fire extinguishers must be kept clear and free from obstructions
- Frequently check the batteries for the fire alarm system and ensure they have power. Batteries must be replaced immediately
- Check evacuation routes and exits and ensure they are clearly marked
- Communicate the fire safety plan to employees, visitors and contractors
- Conduct fire safety drills at least twice per year. Be sure to include the Leguan Fire brigade or other trained professionals who can provide detailed feedback on areas for improvement
- Observe the responses to the drill and adjust the fire safety procedures as necessary
- Clearly post fire emergency numbers near to telephones to facilitate quick access when calling for emergency services

#### 15.3.3 TRAINING

The communication Officer will collaborate with internal and external stakeholders to ensure training takes place:

- Safety Wardens are to be trained in fire safety and must participate in drills. Training should include how to evacuate an area quickly and the appropriate use of fire extinguishers.

#### 15.3.4 FIRE EXITS

Actions	Responsibility
Keep all exits clear and ensure they are clearly marked	Safety Monitor
Exit routes should be kept free of obstructions	Safety Monitor
Exit doors should not be locked and should be easily opened to allow exit from the building	Safety Monitor

#### 15.3.5 IF YOU HEAR THE FIRE ALARM

- Leave the building immediately
- Close all doors behind you to confine the fire
- Use the designated evacuation routes to exit the building
- Take with you fire extinguishers that are along the route to the assembly point. You may need it to put out a fire along the way

#### 15.3.6 AFTER THE FIRE

Actions	Responsibility
Do not re-enter the building until the Emergency Responders have given the all-clear	All persons
Conduct damage assessment using the prescribed procedures	Damage Assessors
Secure the property – if doors and windows need boarding up then do so	Safety Wardens
Arrange for inspection and repair of damaged water mains and electricity	Safety Manager
If vital records have been damaged or lost, take steps to replace them immediately	Safety Manager
Brief staff on when it will be safe to return to work	Communications Manager

## ANNEX B – FLOOD EMERGENCY RESPONSE PROCEDURES

This Flood response Plan will significantly help to reduce property damage, loss of life and business interruptions.

### 15.4 PREPAREDNESS

The activities in this phase are guided by the flood risk analysis that was conducted

Action	Description	Responsibility
Identify flood sources	Monitor the site to identify changes to flood risk which includes changes to canals, sluices/koker and sea level (Special attention should be given for flood and flash flood warnings)	Met office/ GEA
Report infrastructural and drainage issues to the local authority	Surrounding drainage infrastructure should be inspected at least quarterly to ensure that blockages are noted and addressed by local municipalities	Local Works Agency/ GEA
Identify possible lead time for floods	Establish the conditions or rain intensities that may lead to flood and use this data as part of early warning	Met office/ GEA
Update emergency contact list	Information should be up to date and easily accessible to minimise delays in response	GEA
Conduct inspection of buildings and equipment including any pumps installed	Routine inspections can help to identify possible sources of leak which can be remedied prior to a flood	GEA
Prepare diagrams showing location of critical equipment	These may include a map of shut-off valves, pumps, emergency electrical shut off switches and fire suppression systems, in addition to training in use of the systems.	GEA
Stockpiling of necessary spare parts	Storing of spare parts ensure a quick remediation of the site after an extreme weather event. This inventory must be regularly checked and maintained to ensure that they can be used when needed	GEA



## 15.5 WARNINGS AND NOTIFICATIONS

### 15.5.1 FLASH FLOOD WATCH - BE PREPARED (CORRESPONDS TO CODE ORANGE ON THE COMMON ALERTING PROTOCOL).

Actions	Description	Responsibility
Place portable machinery to above predicted flood levels	Wherever possible place tools and portable equipment above predicted flood level to prevent damage	GEA
Remove all hazardous substances to a safe location	Wherever possible place Hazardous material above/out of the predicted flood level to prevent contamination and risk of injury	GEA
Maintain a detailed log of events	This log will outline flood preparation activities, personnel and all precaution executed to ensure minimal impacts on the plant and its personnel	GEA
Update stakeholders on event	All relevant stakeholder will be advised as to the upcoming disaster and the preparations to mitigation damage on the site. This is inclusive of placing Disaster Response teams on standby	GEA
Clean all debris and vegetation surrounding solar structures	Clearing vegetation and loose material around the site reduces the possible damage during an extreme weather event and reduces the clean-up efforts	GEA
Perform bolt tightening and panel integrity checks	This will reduce the chance of critical failure during extreme weather events.	GEA
Place portable machinery to above predicted flood levels	Wherever possible place tools and portable equipment above predicted flood level to prevent damage	GEA

### 15.5.2 FLOOD WARNING – TAKE ACTION (CORRESPONDS TO RED ON THE CAP)

A flash flood warning means that flooding has been reported or will occur shortly. The Met Office will indicate the duration that the flash flood warning will be in effect and the locations that are likely to experience flooding. If Leguan has been identified as a location where flooding is possible, take the following steps:

Actions	Description	Responsibility
Undertake shut-down procedures	As per GEA and Manufacturer's Guidelines	GEA
Have emergency Crews on Standby	The emergency crew will perform critical monitoring and disconnection of electrical equipment to reduce and mitigate damage to the infrastructure and surrounding environment	GEA

## 15.6 FLOOD RECOVERY

Actions	Description	Responsibility
Conduct Damage assessment	After an extreme weather event Inspects of both electrical and civil infrastructure should be executed determine the extent of damage and the required remediation measures	GEA
Initiate clean up as soon as it is safe	The Site must be cleared of all Debris and loose material to prevent further damage after an extreme weather event and ensure the safety of personnel	GEA
Inform insurance company	The insurance provider will be alerted to the nature and the level of damage to start the processing of the associated claims.	GEA
Conduct Damage assessment	After an extreme weather event Inspects of both electrical and civil infrastructure should be executed determine the extent of damage and the required remediation measures	GEA
Initiate clean up as soon as it is safe	The Site must be cleared of all Debris and loose material to prevent further damage after an extreme weather event and ensure the safety of personnel	GEA
Inform insurance company	The insurance provider will be alerted to the nature and the level of damage to start the processing of the associated claims.	GEA
Have all utilities and infrastructure checked by qualified expert	Checks will include a systematic inspects of all parts of the electrical system. Ensuring that all system are clean, dry and fully functional before full operational are provided	GEA

**ANNEX C – AFTERACTION REVIEW FORM**

Title: After Action Review Report for [NAME OF EVENT]

[LOCATION]

LOCATION: [LEGUAN]

<b>Event</b>		<b>Date</b>	
<b>Facilitator</b>			

<b>What was Expected to Happen?</b>	<b>What Actually Happened?</b>

<b>Why was there a Difference?</b>

What Worked Well?	How Can Success be Repeated?

What Didn't Work so Well?	What Can be Improved?

16 APPENDIX D – EVACUATION ROUTES

