CHAPTER 13

CONTINGENCY PLANS

13.1 Introduction

The Contingency Plan for BNE Limited will focus on 3 potential types of disasters that could affect the operation and livelihood of the project in some way or the other. The 3 types that are refer to are both anthropogenic and natural in origin. A more comprehensive and detail plan shall be develop for the Belize Natural Energy Limited once the site is in operation. These disasters are outlined in table 13.1 below and further summarized in the chapter:

Table 13.1 Disaster Preparedness Plans for BNE Limited

Disaster	Description	Response Plan	Stages
Hurricanes and tropical storms	This natural phenomenon can drastically affect the infrastructure and operation should a hurricane strike.	Hurricane Preparedness Plan	Alert, Response, Recovery
Fuel/oil Spills and leaks	These types of disasters are quite common in such an industry and can derive from accidents, equipment malfunction and human error. These can impact the environment.	Oil Spill Response Procedure and the Spill Control and Countermeasure Plan (See Annex V, VI,VII and VIII)	Response, Recovery
Fire, Injury, Gas Detection, Drills	BNE has its specified safety measures at the drilling sites.	Emergency Response Plan Drilling Activities	Alert, Response, Recovery

The types of disasters summarized above are interrelated with other BNE Contingency Plan Documents. , BNE will plan accordingly in order to mitigate and remediate the negative effects these disasters could have on the infrastructure, operation and the environment on a whole.

13.2 Management Structure

The management and staff of Belize Natural Energy Limited will formulate an Emergency Committee charged with addressing the afore mention types of disasters and any significant occurrence of immediate importance. The committee will be charged with electing an Emergency Coordinator, who shall direct all the activities outlined by the plans. The committee shall also appoint assistants should the one in charge is not available. The emergency committee must conduct periodic meetings to address

important issues concerning the disaster management plans. Such important issues should be the objectives of the committee, their roles and responsibilities, updates as well as their terms of reference (TOR) which they will abide by.

13.3 Hurricane Preparedness Plan (Evacuation Plan)

This is the most common natural phenomenon occurring in the country. Belize lies within the hurricane belt, and is vulnerable to high wind and storm surge. During the past 100 years, Belize has been hit several times by major hurricanes. Belize has been hit 40 times by storms ranging from tropical depressions to hurricanes (Usher, 2000). The return period for storms since 1870 is three (3) years, and the vulnerability increases from North to South (Usher 2000).

The hurricane season in Belize commences officially on June 1st and ends on November 30th. As part of its overall Management Plan, the EIA has also considered the issue of safety needs resulting from potential threats other than hurricane. The Hurricane Preparedness Plan (HPP) is aimed at making reasonable preparations should BNE Limited be threatened by an imminent Tropical Depression or Hurricane strike. This is to enable the developers to protect their employees and assets, and also to ensure that the project is able to continue to function after the hurricane has passed.

For this plan to be effective there will be a full meeting between the management and the employees to review the plan prior to the beginning of the Hurricane Season every year: There will also be simulation exercises in relation to various elements of the plan. Due to the location of wells and infrastructure, BNE might divulge to take a less cautionary approach. This information nevertheless, can be passed on the employees for their use.

13.3.1 Purpose of Plan

The purpose of this hurricane preparedness plan is to:

(i) increase awareness to management and others of the need for hurricane preparedness,
(ii) To establish the coordinating mechanisms necessary for BNE to prepare and implement measures to safeguard property and lives of all concerned during the threat of a storm or hurricane.

The basic responsibilities of management is to ensure that the coordinating mechanism that will ensure maximum safety of property or lives during an incoming storm, is put in place, and to make sure that the managers/coordinators are familiar with such mechanism.

13.3.2 Storm Information System

The “official alert” system for hurricane entails coordination between the management of BNE, National Emergency Management Organization (NEMO) and the Belize National

Meteorological Service (NMS). The emergency coordinator will therefore activate the Hurricane Plan.

13.3.3 NEMO Storm Categories

BNE will follow the official alert system currently in place by NEMO.
Hurricanes Categories and Wind Speeds can be described by the following:

Tropical Depression	29 mph – 38 mph
Tropical Storm	39 mph – 73 mph
Hurricane Category 1	74 mph – 95 mph
Hurricane Category 2	96 mph – 110 mph
Hurricane Category 3	111 mph – 130 mph
Hurricane Category 4	131 mph – 155 mph
Hurricane Category 5	Above 155 mph

13.3.4 NEMO Summary of Hurricane Warning Flags

BNE will adopt the official Warning Flag System as follows:

Flags	Phases
One Red Flag	Preliminary Alert Phase (Storm/Hurricane Watch)
One Red flag with Black Center	RED I Phase (storm or hurricane watch)
Two Red Flags with Black Centers	RED II (Warning Phase)
One Green Flag	Green Phase (ALL CLEAR)

13.4 Oil Spill Response Procedure Plan

The Oil Spill Response Procedure for Onshore and Offshore Operations' has been developed to facilitate an effective response in the event an emergency occurs. To ensure a state of emergency preparedness, Belize Natural Energy (BNE) has developed these emergency procedures to protect the public, site personnel, property and the environment. This procedure will be periodically reviewed by the BNE's Health Safety and Environment Management Committee to ensure that the responses are aligned and represent the operations and activities being undertaken by the Company. This report is written with particular emphasis on the Company's Spanish Lookout drilling and production operations, proposed production operation at the Iguana Creek Tank Farm Facility, third party oil tanker road transportation between Spanish Lookout and Big Creek, oil road tanker discharge and barge loading operations at Big Creek, and offshore oil transfer between the barge and tanker.

The information within this procedure will be disseminated to all levels of management including the on-site operations teams. All members of management and personnel will need to know their role in the event of an emergency.

The aim of the Oil Spill Response Procedure for Onshore and Offshore Operations is to prepare staff by the use of training and exercises to react correctly if an oil spill were to arise. The training and exercises should allow personnel to:

- ensure immediate competent responses to, and handling of an oil spill
- minimize danger to the public, employees, contractors and environment
- establish and maintain effective communications with all parties in an emergency: make maximum use of the combined resources of the Company, Government agencies and other non-client services
- preserve relevant records and equipment for any subsequent inquiry into the cause and circumstances of the emergency

This Oil Spill Response Procedure for Onshore and Offshore Operations document provides the plans and information necessary for orderly and planned action to ensure the utmost protection and care for life, environment and property, and finally to return to normal operations consistent with good safety practice. Refer to Annex VI for further details and procedures.

13.5 Emergency Response Plan for Drilling Activities

The Emergency Response Plan for BNE has been develop to address the issues relating to the activities carried out by the company during the drilling process.

13.5.1 Purpose

Belize Natural Energy Ltd has within its responsibility the safety of its crews and contractor's personnel while on-site. This plan was created in order to meet our emergency needs by responding quickly and appropriately to the unusual but potentially devastating effects of an emergency.

The greatest stress for such an event arises from the need for accurate communication in a timely manner. Communication is the most essential function of emergency response. Concurrently, the most problematic aspect of emergency response is that reliable information is usually not forth coming, requiring responders to anticipate and estimate the circumstances under which they are operating. This makes information between involved groups critical and non-routine networks of communication must flow naturally. This plan outlines the structures and means for achieving a coordinated emergency response system, in such a situation. Its focus is upon providing an immediate system for the command, control and coordination of the rig emergency response efforts.

13.5.2 General

The responses to several different emergencies are addressed as individual occurrences in the following sections. However, it must always be remembered that a single emergency incident could involve one or more of the scenarios at the same time e.g. fire, explosion and injury etc, and that the actions detailed can be applied to a single or multiple scenario emergencies. These procedures were produced taking into account the recommendations and control measures identified in drilling and completions operational risk assessment and site specific fire and explosion risk assessments in order to satisfy company policy.

13.5.3 Responsibilities

Should an emergency occur at any BNE operational site, then the personnel on site should carryout their respective roles and activities applicable to the type of emergency. The person in charge at each site takes priority and below is a list of activities that should be undertaken by him/her.

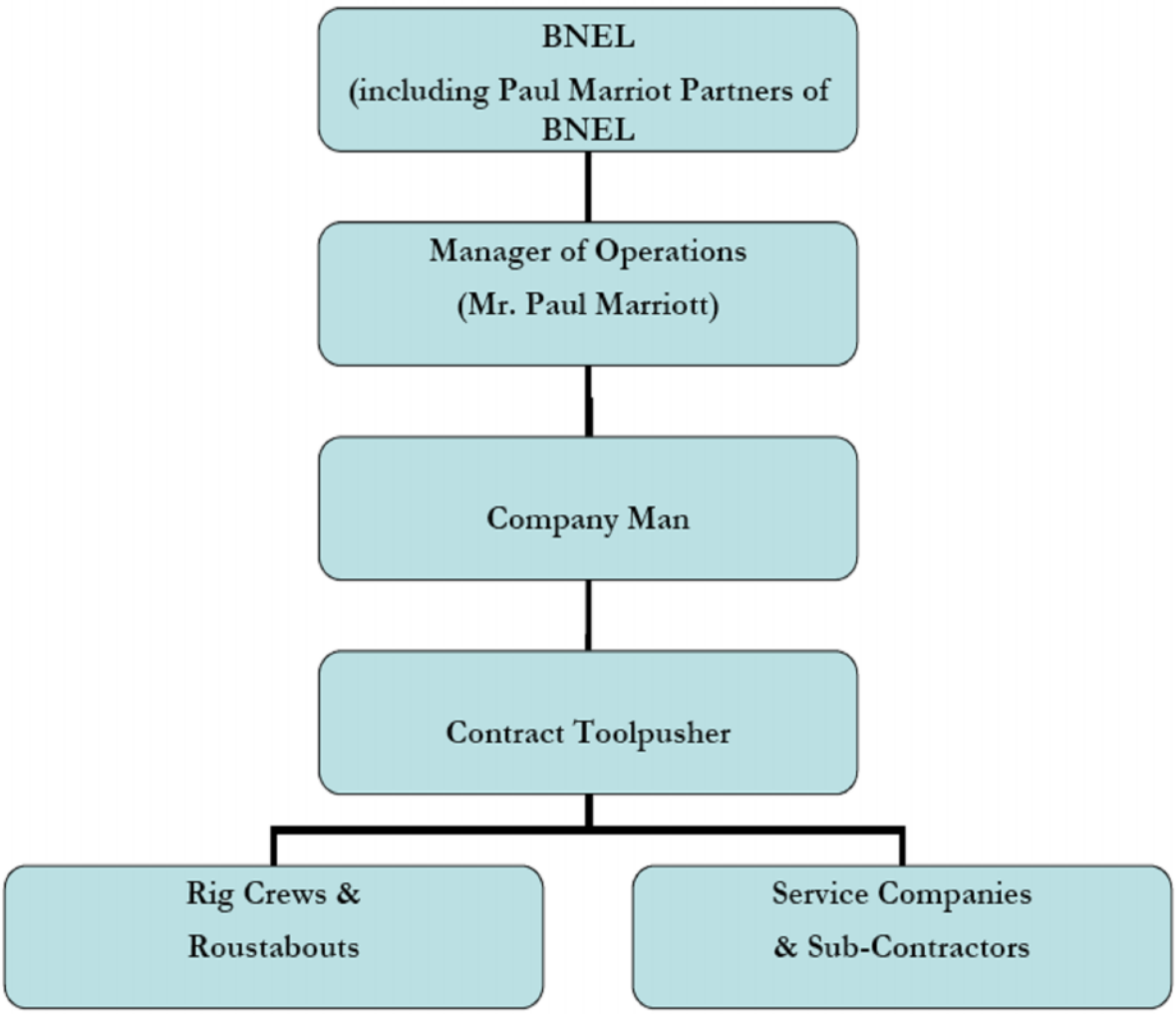

Fig. 13.1 BNE Organization Chart for the Drilling sites

13.5.4 Company Man

The company man will be responsible during the emergency for:

A. Being in overall charge of the onsite emergency response.

B. Contacting and / or calling out such branches of the emergency service e.g. police, ambulance etc. as required to deal with the emergency.

SAN IGNACIO HOSPITAL: Dr. L. Guerra
Call: **824-2066** or **824-2761**

LA LOMA LUZ HOSPITAL, SANTA ELENA:
Call: **804-2985/3253/** or **824-2087/3252**
Ambulance Service: **600-0911, 677-0911** or **614-9807**

SPANISH LOOKOUT CLINIC: FIRST AID & AMBULANCE SERVICE:
Call: **823-0149 or 823-0352**
Ambulance Service: **600-0911, 677-0911** or **614-9807**

SAN IGNACIO FIRE STATION:
Call: **824-2095**

SAN IGNACIO POLICE STATION:
Call: **824-2022**

BELMOPAN FIRE STATION:
Call **822-2311**

BELMOPAN POLICE STATION:
Call **822-2222**

BELMOPAN AMBULANCE SERVICE:
Call **600-0911, 677-0911** or **614-9807**

BELMOPAN HOSPITAL: Chief of Staff – Dr. J. Ken
Call **822-2263** or **822-2264**

IN THE EVENT OF A SERIOUS EMERGENCY: CONTACT BRITISH ARMY EMERGENCY RESPONSE TEAM FOR HELICOPTER MEDIVAC:
Call **225-2024**
Ask for Operations Room
25 Flight Army Aircorp
Speak to Commanding Officer/Doctor in charge

C. Informing the BNE manager of operations of the emergency and issuing him with regular update as the emergency progresses.

D. Requesting such assistance and additional recourses, from the BNE office as required dealing with the emergency progress.

E. Working in close co- operation with the emergency services when they arrive on site.

F. In the event of the site being evacuated, setting up an off site control centre in conjunction with the police and advising the BNE office of changes in the telephone numbers etc.

G. Deciding the details of the emergency to be communicated to the BNE office.

H. Confirming the results of the muster and ensuring that the BNE office has an up to date list of all the personnel on site and details of any casualties.

I. Advising and assisting the toolpusher in the control of the emergency as necessary.

J. Maintaining a log of events.

K. Ensuring, if the site is evacuated that personnel are adequately accommodated and that the BNE office is aware of the location.

L. Being the first point of contact. On site, for civil authorities, government bodies, media etc.

M. Carrying out any other actions necessary to bring the emergency to a satisfactory conclusion.

13.5.5 Toolpusher

The Toolpusher will be responsible during the emergency, for:

A. Reporting to the Muster Point and conducting emergency response under the direction of the Company man.

B. Controlling and directing site personnel with fire, rescue and first aid duties.

C. Advising the Company Man of any casualties and missing persons.

D. Advising the Company Man of the details of the situation, updating him on a regular basis and requesting he obtain emergency services assistance e.g. fire, police etc. ad necessary.

E. Informing the Company Man when the well is secure.

F. Liaising closely with emergency services team leaders when they arrive on site.

G. Making the decision to evacuate the site, in consultation with the Company Man.

13.5.6 Driller

The Driller will be responsible for:

A. With the assistance of his crew, making the well secure.

B. Once the well is secure reporting to the Muster Point, with his crew, and informing the Toolpusher of:

The well Status

Any missing crew members or casualties

C. Carrying out such emergency duties as detailed by the Toolpusher.

13.5.7 All Other Personnel

All other personnel will be responsible for:

A. Reporting to the Muster Point and act as directed by the Toolpusher.

13.6 Post Emergency Actions

Once the emergency has been brought a satisfactory and safe conclusion, the Company Man will:

1. Supervise site restoration plans and activities

2. Conduct an onsite incident inquiry and complete:

A Company Incident report Form

3. Work in co-operation with any official incident investigation team.

4. Direct any media enquiries to the BNE office.

13.6.1 Specific Emergencies

This section of the procedures gives a general description of a variety of incidents, which could occur, on a BNE operational site and any emergency actions, which may be required in addition to those detailed in Section 4.0 of this procedure.

13.6.2 Loss of Well Control

1. General

Loss of well control can result in the uncontrolled discharge of hydrocarbons at surface. This is normally experienced during drilling operations due to unexpectedly encountering high formation pressures. Poor drilling practices can also result in a blowout. Formations pressures in Belize are not normally high, therefore serious loss of well control incidents are highly unlikely.

The continuous expelling of hydrocarbon gases and fluids from the well during loss of control could result in fire and / or explosion, which may be able to be brought under by onsite and local resources. In the case of a situation, which cannot be controlled in this way, then the assistance of a specialist intervention service would be required. The details of intervention specialist can be found in the Oilfield Directory of Contacts.

2. Emergency Actions

Personnel would take the action detailed below, conditions permitting, in addition to those detailed in 4.0 above.

Make safe as much of the site and equipment as possible without endangering life.

Report to the Muster Point and await further instructions.

13.6.3 Fire

1. Emergency Actions.

The actions listed below should be taken, in addition to those detailed in 4.0 above, in the event of a fire:

On Hearing Site General Alarm:

Make safe as much of the site and equipment as possible without Compromising the safety of personnel

Report to Muster Point and await further instructions.

On Discovering Fire:

Raise the alarm locally and warn others in area, by shouting Fire, Fire, Fire.

Evacuate the immediate area of the fire.

Attempt to fight the fire, using site located fire fighting equipment, if this is possible without endangering life.

Report to the Muster Point and await further instructions.

13.6.4 Fuel Oil Spillage

General

The actions to be taken if discovering a fuel oil spillage onsite are detailed below.

1. Person Discovering Spill

   Identify the source of spillage, and if oil is still flowing close-off source, if possible.

   Estimate size and extent of spillage.

   Inform Company Man and direct him to the spill site.

2. Other Personnel

   Shutdown equipment.

   Report to Muster Point and await instructions.

3. Toolpusher

   Secure the operation.

   Supervisor the crew to proceed to spill site and assist.

4. Company Man

   Evaluate size and cause of spill, and ensure oil flow is stopped at Source, if possible.

   Instruct crew to operate well site oil spill contingency supplies.

Isolate any potential ignition sources, and if any danger of Fire / explosion send all crew to Muster Point.

Ensure safe storage of recovered oil and oily waste.

Check that site containment facilities (drainage valves to Interceptors / bunds etc) are secured.

Notify the relevant authorities and the Operations Manager if the Spillage leaks off site or into waterways etc.

Instruct the Toolpusher to supervise clean up operations.

13.6.5 Escape of Gases

1.General

This section details the procedures to be followed in the event of a leak of Inflammable gases (hydrocarbons) or poisonous Hydrogen Sulphide (H2S) gas.

All Company and Contractor personnel will be trained in the potential hazards Caused by gas accumulations (including H2S) and the use and operation of the Monitoring instruments located on site.

Although H2S is not normally encountered in the Belize, it is recognized that even
Relatively low level accumulations can be extremely dangerous.

Significant levels of methane and flammable gases will be detected by mud Logging gas detectors as well as H2S

13.6.6 Well site response in the event of a gas leak

1. All personnel

a. In the event of a gas leak the following action will be actions taken:

Inform the Company Man whether it is methane or H2S gas that has been detected. Warn other personnel in the area.

If someone has collapsed, put on Scott Air Pack and attempt to remove them from the area with out putting other personnel at risk.

Shutdown and make the equipment safe if possible.

Report to muster point and await further instructions.

b. On hearing the site alarm

Shutdown and make all equipment safe, if possible.

Report to muster point and await further instructions.

2. Driller

a. Make the well safe and shutdown equipment.

b. Attempt to rescue any casualties if it is safe to do so.

c. Attempt to identify source of gas leak and secure if possible.

d. Ensure the Tool pusher is kept fully informed of the status of the situation.

e. Report to muster point and await further instructions.

3. Toolpusher

a. Ensure drilling crew are taking appropriate action.

b. Organize search and rescue teams if required.

c. Ensure fire-fighting equipment is manned.

d. Confirm with the Company Man that the Fire Brigade And Police have been informed.

4. Company Man

a. Contact the Fire Brigade and report on risk of fire, give site Location and any personnel missing or requiring rescue.

b. Establish number of casualties and ensure that proper attention is being paid to missing/injured personnel. Call out ambulance if there are any casualties.

c. Call the Operations Manager giving details of the situation and issue him with regular updates.

d. Ensure all well site personnel are aware of the situation and take any actions required.

e. Liaise with emergency services upon their arrival at the well site, if they have been called out.

f. Supervise operations to locate source of gas and to secure leak.

g. Arrange with Toolpusher for evacuation of personnel from well site if required.

h. Carry out duties in accordance with section 4.0 above

13.6.7 Incident Involving Injury to Personnel.

In the event of there being an incident, on the well site, which results in a person Or personnel being injured, the following actions will be taken.

1. Person Finding the Casualty

The person finding the casualty or observing the person being injured will:

Contact the Toolpusher immediately, and if possible stay with the victim(s) until he arrives.

Only move the injured person(s) before the Toolpusher arrives if they are exposed to further danger.

Assist the Toolpusher as requested.

2. Toolpusher

Apply first aid as required and move victim(s) to the Muster Point if this can be done without aggravating the injuries.

Instruct one of the assisting personnel to inform the Company Man of the situation.

Request the Company to inform the local Medical Practitioner and / or call an ambulance as appropriate.

If the casualty(ies) need referring to the local Medical practitioner, pass the details to him/her be telephone and request the Company Man to arrange transport to the surgery.

If the casualty(ies) appears to need immediate hospital treatment, request the Company to call an ambulance and prepare a Casualty Evacuation Form (for each casualty) to pass to the ambulance crew to take to hospital.

Assist the Company Man to complete an Accident/Incident Report as appropriate.

3 .Company Man

Arrange for transport to the local Medical Practitioner or an ambulance, as requested by the Toolpusher.

Call the Police and request that they attend the scene of the accident if appropriate.

Ensure that immediate medical attention is being given to all victims, and organise assistance with communications and other logistics.

Obtain information required for the incident report, including names of injured personnel, injuries, treatment administered, names of witnesses, details of incident.

Call the Project Operations Manager giving full details of the situation.
After emergency is over, complete the Accident/Incident Report. Take witness statements.

Implement the initial incident investigation process.

13.6.8 Muster Point, Alarms, Mustering and Site Evacuation

1. Muster Point

The Muster Point will always be located outside the site gate and will be clearly identified.

2. General Site Alarm

The rig horn will be used as the general site alarm and activated in the event of a fire, explosion, gas release or any other emergency, which necessitates personnel going to emergency stations/muster. All personnel employed at, or visiting, the well site will be made familiar with, as part of their site orientation and safety briefing, the sound of the alarm.

3. Mustering

In the event of an alarm sounding, unless otherwise instructed by the Company Man, personnel without emergency duties will secure their work site and proceed directly to the Muster Point

Upon arrival at the Muster Point, during a muster all personnel will report

To the Toolpusher who will acknowledge their presence and report any missing personnel to the Company Man. He will attempt to establish the whereabouts of any missing personnel and will ensure everyone at the stations is clear about their duties.

4. Site Evacuation

In the event of an emergency being of such severity that it would endanger the safety of any person remaining on site then the Company Man will instruct all personnel to :

Report to the Muster Point

Once accounted for proceed to a pre-determined Site Evacuation Assembly Point and remain there until instructed otherwise.

The Site Evacuation Assembly Point will be identified prior to operations commencing at each site and made known to site personnel and visitors during start-up safety meetings and safety briefings.

The Company Man will instruct certain persons to alert nearby residents To evacuate their houses if they are in danger

13.6.9 Emergency Drills

An emergency drill, involving all site personnel, will be conducted on a weekly basis, in order to ensure that everyone employed on site is fully aware of their individual and collective responsibilities in a real emergency situation.

The results of drills and the response and performance of personnel will be discussed during safety meetings.

13.6.10 Gas Detection

The gas detection equipment, detailed below will be located on site at all times whilst drilling and/or completions operations are in progress. The locations of the equipment will be marked on the Well Site Plans, which will be in dog house.

- **Gas Detection Equipment**

Two multi-sensor gas detectors will be located on the well head. This equipment has the capability to detect methane gas, H2S gas and depleted

oxygen levels. The detectors are fitted with distinctive alarms for each function and will be operating during all drilling operations.

13.6.11 Fire Fighting Arrangements

The well site is equipped with an adequate number of fire extinguishers And they are clearly marked.

In the event of a major fire on site, which the risk assessment showed would most likely be of a domestic nature, then the services of the local fire brigade would be called upon.