

DELIMARA GAS AND POWER

Combined Cycle Gas Turbine (CCGT)
and
Liquefied Natural Gas (LNG)

Receiving, floating storage (FSU) and regasification facilities



EXTERNAL EMERGENCY PLAN

(In compliance with COMAH regulation 10, sub 5)

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Preface

This Plan has been prepared by the Civil Protection Department, based on the information provided to the OHSA by the Delimara gas and power operators regarding the nature, extent and likely off-site effects of a major accident involving dangerous substances covered by the Maltese Control of Major Accident Hazards Regulations 2015 (COMAH).

The Plan contains commercial information provided in confidence for official purposes. Its contents are only to be disclosed on a "need to know" basis to Authorities concerned with implementing the Plan in the event of a major accident at the Delimara gas and power | Receiving, floating storage and regasification facilities.

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PART 1 | INTRODUCTION

Terms & objectives

Justification	<p>The Seveso III EU Directive has been transposed into Maltese law through the Control of Major Accident Hazards (COMAH) Regulations (L.N. 179 of 2015).</p> <p>Competence for the COMAH Regulations, enacted under the Occupational Health and Safety Authority Act, is shared between the Occupational Health and Safety Authority (OHSA) as set up by the Act, the Environment and Resources Authority (ERA), established by the Environment Protection Act and the Civil Protection Department (CPD), established by the Civil Protection Act, with OHSA taking the lead in co-ordinating the administrative actions of the COMAH Competent Authority.</p>
External emergency plan	<p>The Occupational Health and Safety Authority (OHSA) has informed the Civil Protection Department (CPD) of the duty to produce an external emergency plan for the Delimara Gas and Power establishment (Receiving, floating storage and regasification facilities) within its area.</p>
CPD	<p>The Civil Protection Department (CPD) safeguards human lives, property and the environment in Malta. It also maintains a national system of prevention, preparedness and response to any disaster that could affect the Maltese community.</p>
Information	<p>The operator has provided the OHSA with the necessary information about the nature, extent and likely effects of reasonably foreseeable major accidents. The information is sufficiently detailed to help CPD prepare the external emergency plan.</p> <p>The OHSA has requested additional information that CPD reasonably requires for the preparation of the external emergency plan. The operator has kept a record of the information supplied to the OHSA, the source of the information and how it will be reviewed, revised and updated.</p>
Consult	<p>The CPD has consulted emergency experts of Falck when preparing the external emergency plan.</p>
Purpose	<p>The emergency services have duties to deal with accidents and emergencies of all sorts. Therefore, the COMAH external emergency plan is principally a tool to co-ordinate the existing emergency services' plans, as far as possible, in their preparation for dealing with the specific hazards and risks associated with accidents on major hazard establishments.</p> <p>This includes identifying key personnel from a range of organisations, and defining their duties in the event of an accident. It is then possible to ensure that those identified are adequately trained to carry out these roles.</p>
Liaison	<p>Local authority emergency planning staff has produced this plan in liaison with the COMAH establishment staff, the competent authority, the emergency services, the health authority and appropriate members of the public.</p>

Co-operation	MHAS manages the civil protection department. Emergency planning officers provide the focus within the community for carrying out MHAS civil protection responsibilities in close co-operation with the emergency services, authority departments, and industrial plus commercial organisations.
Overall	Dealing with disaster states that: 'The underlying aim of integrating the arrangements
Integration	<p>for emergency management is that flexible plans are developed which enable organisations to deal effectively with a major or minor emergency', which results in the overall integration of the arrangements for emergency management.</p> <p>Such plans are general in nature, but they provide a framework within which COMAH external emergency plans can be incorporated. Therefore, existing general organisational arrangements with the emergency services, voluntary organisations and others are used.</p>
Self-contained	In this case the particular arrangements for Delimara COMAH establishment & FSU is a self-contained document, not an appendix to a general plan covering several establishments.
Domino effect	<p>The emergency plan for an establishment identified as having the potential for a domino effect (domino site) must take this into account, and the operators involved should exchange any information necessary to allow this.</p> <p>Domino sites are sites where the likelihood or consequences of a major accident may be increased because of the location and close proximity of other COMAH establishments and the dangerous substances present there. These sites need special consideration in terms of emergency planning, and the testing of the external response.</p>
Authority	This plan is issued under the authority of the Minister responsible for occupational health and safety, civil protection and the environment, following consultation with the OHSa, CPD, ERA and the operator(s) of the Delimara COMAH establishment & FSU, to meet the governmental responsibility to prepare an external emergency plan under the Control of Major Accident Hazards Regulations 2015 (COMAH).
Objectives	<p>The objectives of this plan are to:</p> <ul style="list-style-type: none">▪ Minimise the effects of an incident to limit damage to persons and property;▪ Implement the measures necessary to protect persons from the effects of major incidents;▪ Communicate the necessary information to the public, the emergency services and authorities concerned in the area.

PART 2 | AREA & EXTERNAL EMERGENCIES

2.1 Location

The Delimara power station site is located south east of the town of Marsaxlokk along a peninsula in the southern part of Malta.

The site is bounded to the east by a road which runs between Tas Silg Fort and Fort Delimara, at an elevation of approximately 40 m above sea level. The western boundary of the site is delineated by Marsaxlokk Bay.

The location of the site is shown in the following figures:



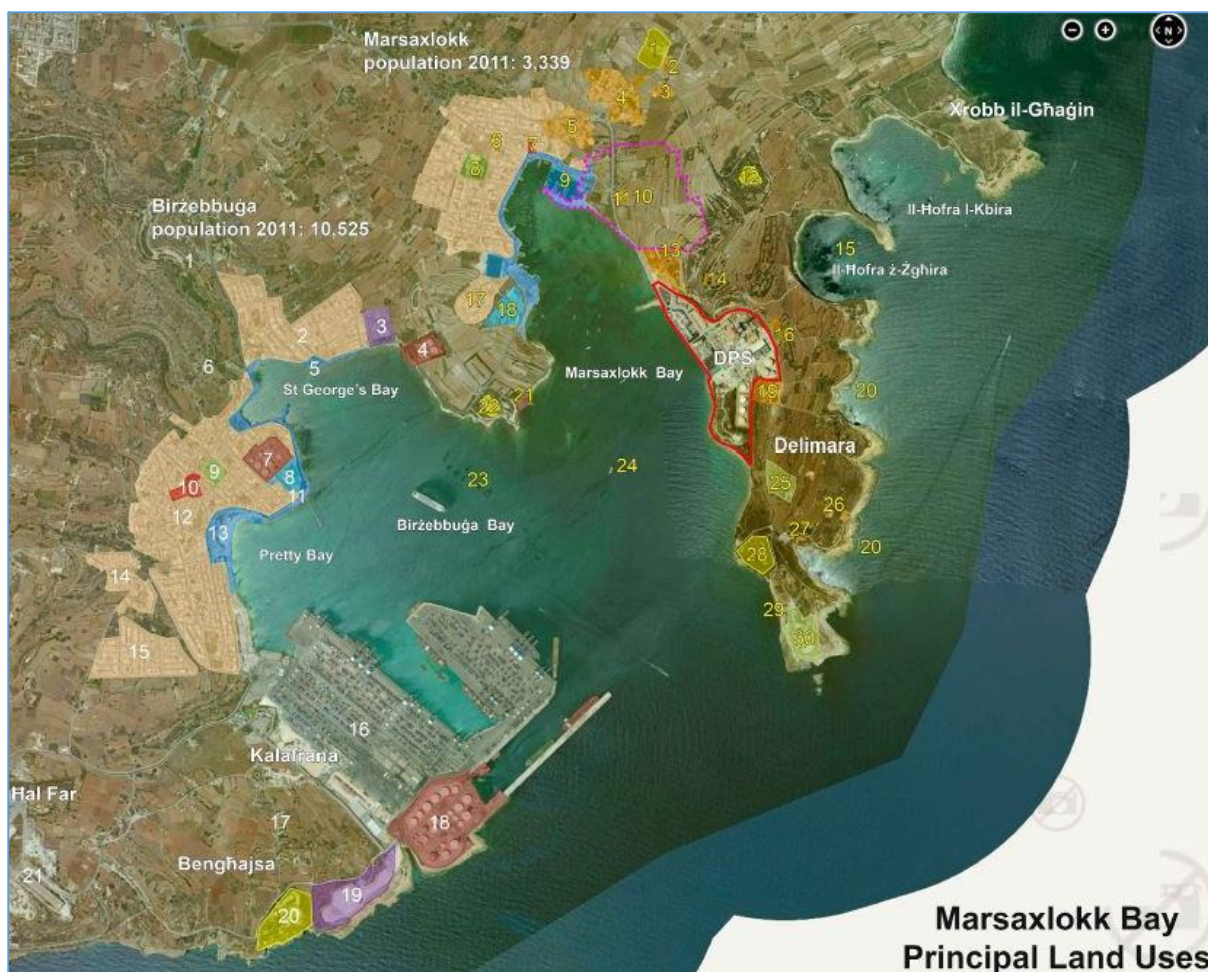
2.2 The Local Community

The area immediately surrounding the site is mainly in agricultural use. However, few scattered residential buildings are also present close to the site, including some cottages, a horse farm, an historic fort and a farm in the extreme south of the Delimera peninsula.

The nearest population centre is Marsaxlokk Village which lies approximately 1 km north-west of the site, with a total area of 4.7 km². The village is important as a traditional Maltese fishing village. The last National Census reports that Marsaxlokk's population increased substantially after WWII, from 1,431 in 1931 to 3,366 in 2011.

The town of Birzebbuga is located approximately 2 km west of the site, across Marsaxlokk Bay, and has a population of 10,412 persons. The town comprises a mix of residential, commercial and industrial developments.

In addition to general residential developments in Marsaxlokk and Birzebbuga, there are a number of other sensitive buildings. These buildings mainly include primary schools and Parish churches.



Marsaxlokk

1. Important archaeological find	11. Low density residential	21. Petroleum tank (disused)
2. Low density residential	12. Historic fort (dog sanctuary)	22. Historic fort/research centre (fish)
3. Convent/chapel	13. Low density residential	23. Fish cages
4. Low density residential	14. Low density residential	24. Dolphin
5. Low density residential	15. Fish farm	25. Horse farm
6. Predominantly residential	16. Low density residential	26. Low density residential
7. Parish church and square	17. Medium density residential	27. Low density residential
8. Primary school	18. Light industry	28. Historic fort
9. Fishing, recreation and tourism	19. Low density residential	29. Light house
10. Site of community importance	20. Coastal ecology/swimming	30. farm

Birżebbuġa

1. Important archaeological find	8. Importer of petroleum products	15. Predominantly residential
2. Predominantly residential	9. Primary school	16. Malta Freeport (transshipment)
3. Unused LPG storage depot	10. Parish church and square	17. Small residential hamlet
4. Petroleum storage tanks	11. Historic redoubt	18. Active petroleum storage depot
5. Historic redoubt	12. Predominantly residential	19. Active LPG storage facility
6. Important archaeological find	13. Recreation & tourism (at coast)	20. Historic fort
7. Petroleum storage tanks	14. Predominantly residential	21. East of industrial estate

2.3 Industrial Premises nearby

The Malta Freeport, which was set up in January 1988, is a customs free zone located around the much-developed Marsaxlokk harbour in the southern part of the Island. It lies in Birżebbuġa, on the site of the former seaplane base RAF Kalafrana.

Marsaxlokk and Birżebbuġa harbours include most of the COMAH establishments in Malta: Delimara Power Station (Marsaxlokk), 31st March 1979 Installation (Birżebbuġa), Oil Tanking Malta (Birżebbuġa, Malta Freeport), Gasco Energy (Birżebbuġa), Wied Dalam Installation (Birżebbuġa), San Lucian Oil Co. Ltd (Birżebbuġa).

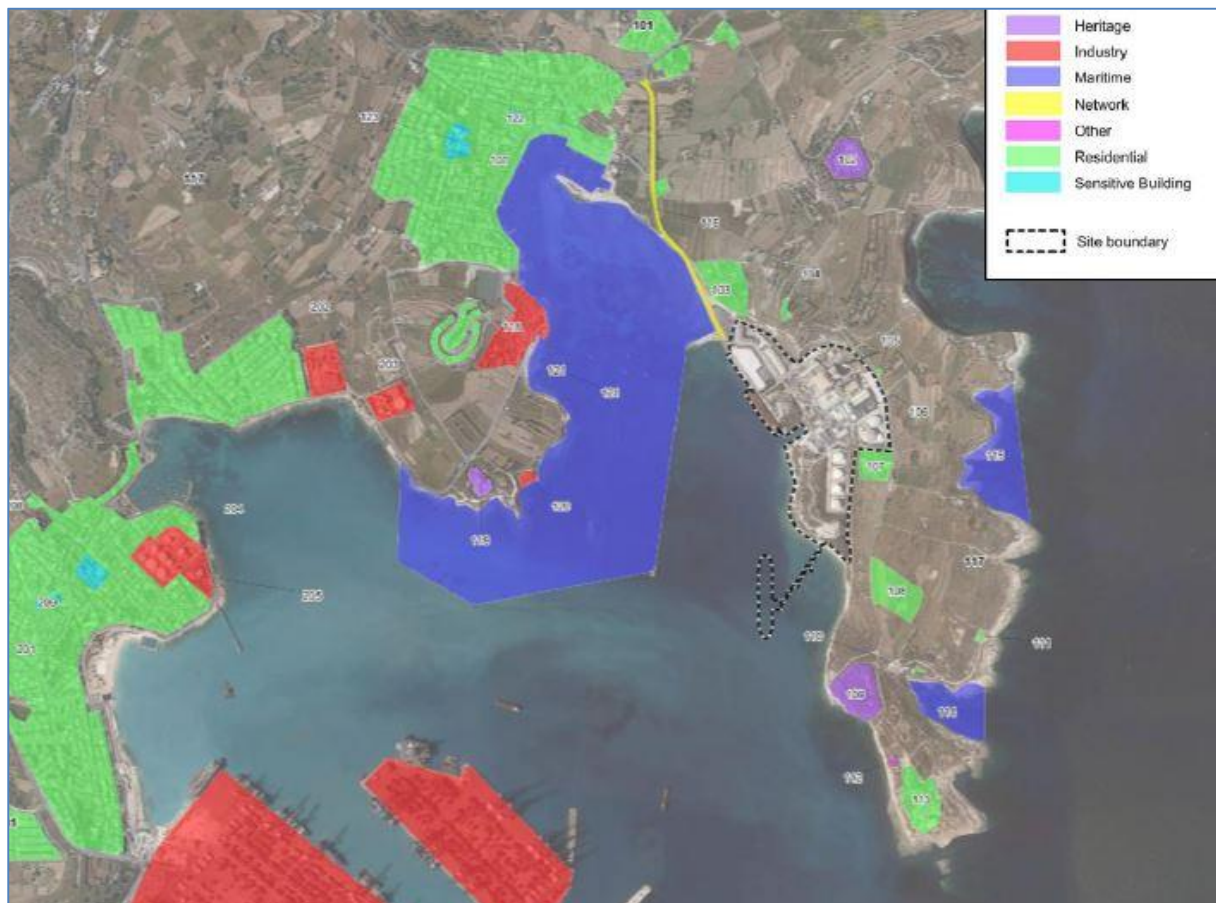
The LPG storage and bottling plant at Qajjenza, previously a COMAH site, is to be dismantled in the near future.

2.4 Maritime area

The maritime area of Marsaxlokk Bay incorporates a range of different sea uses. These include fishing with various sizes of fishing vessels operating in the area, aquaculture with a number of pens located offshore, bunkering facility and shipping and trans-shipment, with several vessels traversing the area, including vessels making use of Freeport facilities. Vessels include (in addition to fishing vessels) coasters, relatively small tankers, deep sea-going container ships, pleasure craft, and others.

2.5 Site boundary

The differentiated areas and site boundary of Delimara power station is stipulated below:



2.6 Site layout

The new CCGT Power Plant and LNG Terminal at the Delimara site include the following facilities, partitioned into areas:

Area: Designation

A1	Floating storage unit (FSU)
A2	Jetty
B1	Regasification unit (RGU)
B2	BOG Compressors Shelter
B3	Regasification control & electrical building and utilities
C	Natural gas pipe rack form regasification to Delimara Power Plant (D3PP / D4PP)
D	Delimara 3 Gas Receiving Station (D3PP GRS)
E	Delimara 4 Power Plant (D4PP)

2.7 Site Activities

2.7.1 FSU and LNG Terminal

LNG is transferred from LNG carriers to the FSU through a ship-to-ship transfer system.

The jetty provides safe berthing for the LNG carriers and the FSU in a ship-to-ship mooring configuration. The ship-to-ship mooring system will comprise dolphins. This arrangement allows LNG cargo carriers to be moored alongside the FSU.

2.7.2 Regasification Plant

The LNG is transferred by in-tank pumps, as required, to the onshore regasification compound through the unloading system where it is converted to natural gas (NG) for use in the Delimara 4 CCGT and/or the Delimara 3 Power Plant.

The natural gas resulting from the regasification process is clean with a high content of methane suitable for use in both the CCGT and the Delimara 3 Power Plant.

2.7.3 CCGT Power Plant

The CCGT power plant includes three gas turbine generators which are optimized for combined cycle applications with considerable high energy exhaust resulting in high efficiency. The working principle is common with any other state-of-the-art CCGT.



2.8 Emergency definitions

Accidental events at the “DELIMARA GAS AND POWER | Receiving, floating storage and regasification facilities” are classified in different emergency levels (seriousness / importance levels) by taking into account a number of parameters and conditions such as, the capability to control the event and the actions and resources required to control and mitigate the accident consequences.

The importance or seriousness of an accidental event is identified at real time, at the moment of its occurrence and/or during the phases of intervention and monitoring of the event development.

Three different emergency levels can be designated to the accidental events. For each and every emergency level, a number of distinct criteria are specified with the aim to support the decision making process for the rating of all accidental events and required actions in different emergency levels.

2.8.1 VERY SERIOUS EVENTS

Such events refer to **all types of events with direct consequences (effects) outside the boundaries of the establishment and pose immediate risk to the public health and safety and to the environment** independently of the extent of their effects.

For very serious events, a wide activation of the response bodies (internal & external) and civil protection forces is normally required for the minimization of accident effects to the people and the environment.

2.8.2 SERIOUS EVENTS

Such events refer to **events without direct consequences outside the establishment boundaries, but with such a high risk that poses a potential threat, even limited, to the external areas of the establishment.**

For such serious events, the activation of the internal emergency plan is necessary and the intervention of response bodies (external) is normally required.

2.8.3 MODERATE EVENTS

Such events refer to **localized events or threats without any effect (consequence) outside the establishment boundaries that can be controlled (controllable) by the resources, systems and means available within the establishment.** Examples are:

- Fire without any immediate or potential effect outside the establishment boundaries;
- Release that can be controlled immediately with the available resources (safeguards);
- Near misses.

According to the seriousness level (emergency levels) of a potential accidental event, as described above, three distinct levels of emergency activation can be identified. Such levels (emergency rating) indicate the request for external support in the confrontation of the potential events.

Emergency levels (event seriousness) and levels of emergency activation:

Seriousness of event	Level of emergency activation	
MODERATE EVENT	E3	<i>Potential emergency situation</i>
SERIOUS EVENT	E2	<i>Limited emergency</i>
VERY SERIOUS EVENT	E1	<i>Full emergency</i>

2.9 External emergency types

In operators safety report moderate events (level E3) and serious events (level E2) without direct consequences outside the establishment boundaries are identified as being most likely to occur. Those identified events can be controlled by the resources, systems and means available within the establishment; During those events the activation of the internal emergency plan is necessary, but no intervention of external response bodies is normally required.

In view of the 'STATE-OF-ART' built-in safety employed in these Delimara gas and power | Receiving, floating storage and regasification facilities the changes of an serious and very serious event (level E2 & E1) that would put the public/environment at risk off-site are remote.

Nevertheless, - in close consultation with Falck - it is stated that the level of external emergency planning by CPD has to be proportional regardless of the probability of identified events.

That's why two very serious (E1) extremely unlikely event types with direct consequences outside the establishment boundaries have been selected.

- **EVENT TYPE 1 : LARGE FLAMMABLE VAPOUR CLOUD, unignited**
Example: FSU cargo tank → leak/break → LNG spill on water → flammable vapour cloud → driven by the wind → unignited.
- **EVENT TYPE 2 : LOCAL FIRE, domino effect**
Example: Explosion technical room FSU → escalate to LNGC, when moored alongside FSU.

Operational preparedness by public emergency services with respect to these type of external emergencies are further clarified in section 2 "Scenario specific emergency response considerations".

PART 3 | RESPONSE

3.1 Activation of plan

- It is vital that at any incident at the “Delimara gas and power | Receiving, floating storage and regasification facilities” an immediate assessment is made of the particular hazards and a decision taken as to whether or not the external emergency plan requires to be activated.
- Responsibility for declaring a serious event (E1 & E2) will lie with the CPD Incident Officer who will request the activation of the external emergency plan when necessary. In the event of non-activation of the external emergency plan the situation will be kept under continual review.
- The external emergency plan, whether in whole or in part, will be activated on the authority of the CPD Head as the Emergency Controller. Should, for any reason the Emergency Controller not be immediately available authority should be sought from the CPD Deputy Directors.
- Initial contact with the “Delimara gas and power | Receiving, floating storage and regasification facilities” should be via the pre-notified normal callout procedures.

3.2 Control responsibility

- The responsibility for control and co-ordination of public safety measures will lie with the CPD Incident Officer, acting on advice given to him by the senior port authority representative and senior “Delimara power and gas facilities” representative and other appropriate persons. During any off-site incident the CPD will be supported by other organisations. This may involve the deployment of “Delimara power and gas facilities” resources.
- While each organisation involved will have its own tasks to perform and emergency procedures to follow, it is important that the overall response be based on an integrated approach, co-ordinated by the CPD Incident Officer.

3.3 Control Locations

- In the event of an emergency on-site, initial action will be taken in the On-site Emergency Control Room (on-site ECC).
- If the incident is of significant proportions, the senior co-ordinating group convenes at an external ECC, located at a safe distance from the accident location. The group consists of the senior officers representing the CPD, police, ambulance service, OHSA, ERA, the operators and, if appropriate, the Port Authority (Transport Malta). The senior CPD officer will normally take the chair in the initial stages, but the group should strive to work together as a team. At a later stage it is likely that the group would be chaired by a senior authority officer.
- The senior emergency co-ordinating group at the external ECC should, once adequately established, take over the management of the external aspects of the emergency response from the on-site ECC, including the media liaison role. This will enable those on site to concentrate on the tactical and operational matters to bring the incident under control.

3.4 Immediate Response

Alarm center

- The duty officer, alarm center, will notify services and personnel as appropriate in accordance with their Operational Orders. This will include notifying the other emergency service controls; hospitals; the office of the Prime Minister and the OHSA Executive.

CPD

- The CPD will take immediate and appropriate action to protect any public in the area or sectors affected or likely to be affected.
- Arrange for a CPD Officer to attend at the Emergency Control Room and to assume the role and responsibilities of CPD Incident Officer.
- The CPD Control Room will mobilise resources in accordance with their Standing Orders. This will include immediate mobilisation of the pre-determined attendance to the Rendezvous Point.

Ambulance

- The Ambulance Control Centre will mobilise ambulance resources and alert the Receiving Hospital in accordance with their Standing Orders. This would include:
 - An initial attendance to the incident
 - Notification of the situation to the designated Receiving Hospital

Control Hospital

- The Control Hospital will mobilise resources as required in order to give medical care to casualties and initiate their own Major Emergency Procedure.

Transport Malta (Ports Directorate)

- Transport Malta (Ports Directorate) will mobilise resources as required in accordance with their Standing Orders.

Police

- Malta Police force will mobilise resources as required in accordance with their Standing Orders.

Armed Forces of Malta

- Armed forces of Malta will mobilise resources as required in accordance with their Standing Orders.

PART 4 | IMPLEMENTATION

4.1 Identification of Key Personnel

To enable the rapid identification and movement of emergency services and key personnel the following arrangements apply:

- (a) Emergency Services: Operator Security Gate Staff will direct and assist public emergency services on arrival at the site entrance. The emergency services can be assumed to be adequately identified;
- (b) Operator Staff: Key call-in staff have authorised passes and should be given every assistance by the CPD in reaching the incident.

4.2 Incident Development / Monitoring

As the emergency organisation is built up, response strategy may require to be adjusted in the light of incident development and continual monitoring, frequent briefings and liaison between all involved parties will be crucial.

4.3 Evacuation

Procedures for evacuation of people from the facility itself are detailed in internal emergency plan.

Emergency transport facilities may be required, and will need arranging rapidly.

Any evacuation of persons within the off-site hazard area will be under the control of Police, and evacuation procedures will be decided at the time, taking into account the type of incident, weather conditions and technical advice given by CPD & the site management.

If the situation warrants it the decision may be taken to evacuate not only the non-essential people in the facility but also part of the island residents.

Arrangements are in place for the CPD Emergency Co-ordinating Officer to request assistance from Malta Police Force, Transport Malta and to use Armed Forces of Malta resources when not deployed in their primary role.

4.4 Casualties

Ambulance and medical services will deal with any casualties and arrange for their local medical treatment or removal to facilities elsewhere as appropriate.

Normal CPD & Police procedures will be followed if fatalities occur.

4.5 Press and Public Relations

The “Delimara gas and power | Receiving, floating storage and regasification facilities” operators will set up a Press Information Centre at an appropriate location -the telephone number will be issued at the time of the incident. All press statements about on-site matters should be agreed in advance by the terminal management and the CPD. All press statements regarding off-site matters should be agreed in advance by the site management, the OPM Chief Executive or his nominated representative and the CPD.

4.6 Other Interests and Resources

Depending on the nature and longevity of any incident, support and assistance may be obtainable or offered from a number of sources.

4.7 Meteorological Information

It will be important to establish wind and weather conditions at the site and to arrange for continual forecast updates. The CPD Incident Officer will ensure that a link is established with the Meteorological Office, to monitor likely developments.

PART 5 | EVALUATION

5.1 Recording Events

An Event Log will be kept during the course of the emergency by all response organisations recording events in 'actual time' from initial callout.

5.2 Financial Procedures

In an emergency situation, expenditure is likely to be necessary and because of the urgency it may not be practicable to use normal approval procedures (e.g., hiring of plant and equipment). In such circumstances the Chief Executive, OPM, through his Director of Finance or representative, may authorise immediate expenditure of funds in accordance with statutory provisions. It is important, therefore, that a record of expenditure is kept in order that apportionments and claims may be settled at a later date.

5.3 Stand Down

The responsibility for declaring any incident over and permitting 'stand down' in whole or in part will lie with the CPD Incident Officer after consultation as appropriate.

5.4 Review of Effectiveness

After the emergency situation has passed and relative normality returned to the affected area, the Chief Executive will arrange a review of the effectiveness of the External Emergency Plan by appropriate persons.

5.5 Testing of this Emergency Plan

This Plan will be tested at suitable intervals and revised / reviewed thereafter as necessary.

PART 6 | ADVICE TO THE PUBLIC

In the event of a Major Emergency at the “Delimara gas and power | Receiving, floating storage and regasification facilities” it is the responsibility of the CPD and DOI to inform the residents of the Island that an incident has occurred.

In the event of a major emergency the CPD will inform the community of the incident and the requested actions to be taken by them.

The CPD will inform the local community through Local Council Contact,.

The operators representative, ElectroGas Malta Ltd. will distribute an emergency information card to all households of the local community on behalf of themselves and the authorities.

The Emergency Action Card will list the requested actions to be taken in an emergency and replicate the instructions to be received on the automated phone messaging system.

The CPD will take the decision as to whether or not an evacuation of the resident population will take place in consultation with the operator and the OPM.

SECTION B | OPERATIONAL

Information in the Operational Section (Section B) of this document is being withheld from publication on grounds of National Security.