

Windpark Katwijk

Contingency Plan

(Engelstalige equivalent van Calamiteitenplan)

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DISTRIBUTION

This document will be distributed to all contractors, sub contractors and authorities as deemed necessary by the construction manager. A distribution list will be kept up to date by the CONTRACTOR

USEFUL ADDRESSES

MRCC De Helder XXXXX

Hospital XXXXX

DOCTOR XXXXX AIRPORT Amsterdam Schiphol

DOCTOR XXXXX AIRPORT Rotterdam

AMENDMENTS

Amendment No.	Date	Amendment	Name/Initials
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DEFINITIONS

ACO	Aircraft Coordination
CONTRACTOR	To be nominated main contractor
EMERGENCY	Unplanned incident which can develop into hazards to human lives, damage to the environment, damage to equipment and installations unless dealt with prompt and efficient.
EOD	Explosieven Opruimings Dienst (Dutch Bomb Squad)
ERC	Emergency Response Committee
Lat./Long.	Latitude and longitude
HSE plan	Health, Safety and Environment Plan
MHWN	Mean high water neap
MHWS	Mean high water spring
MLWN	Mean low water neap
MLWS	Mean low water spring
MOB Boat	Man Over Board Boat. A vessel equipped, manned and approved to rescue persons fallen into the sea either from vessels or from installations.
MRCC	Maritime Rescue Coordination Centre Den Helder



MSL	Mean sea level
NAWWARN	Navigational Warning
nm	A nautical mile (2000 yards) is 1852 metres
NOK	Next Of Kin
NOTAM	Notice to Airmen
NTM	Notice to Mariners
Nuon	NV Nuon
OSC	On Scene Commander
PAX	Passenger
POB	Persons on Board. A list of all persons on board vehicles and installations within the offshore work site. The list must be precise all the time and instantly available on request by management or authorities.
Principal	WEOM (Wind Energie Ontwikkelings Maatschappij); Shell WindEnergy B.V. (Shell) NV Nuon (Nuon)
RCMS	Radio Controlled Monitoring System.
RSC	Rescue Sub Centre
RWS	Rijkswaterstaat Noordzee
SAR	Search and Rescue
SBV	Stand by Vessel. A vessel positioned within the working area with the purpose of rendering assistance to the personnel working off-shore
Shell	Shell WindEnergy B.V.
SMC	Sar Mission Coordination
SRR	Search and Rescue Region



UTM	Universal Transverse Mercator
WPA	Work Place Assessment
WTG	Wind Turbine Generator

1. INTRODUCTION

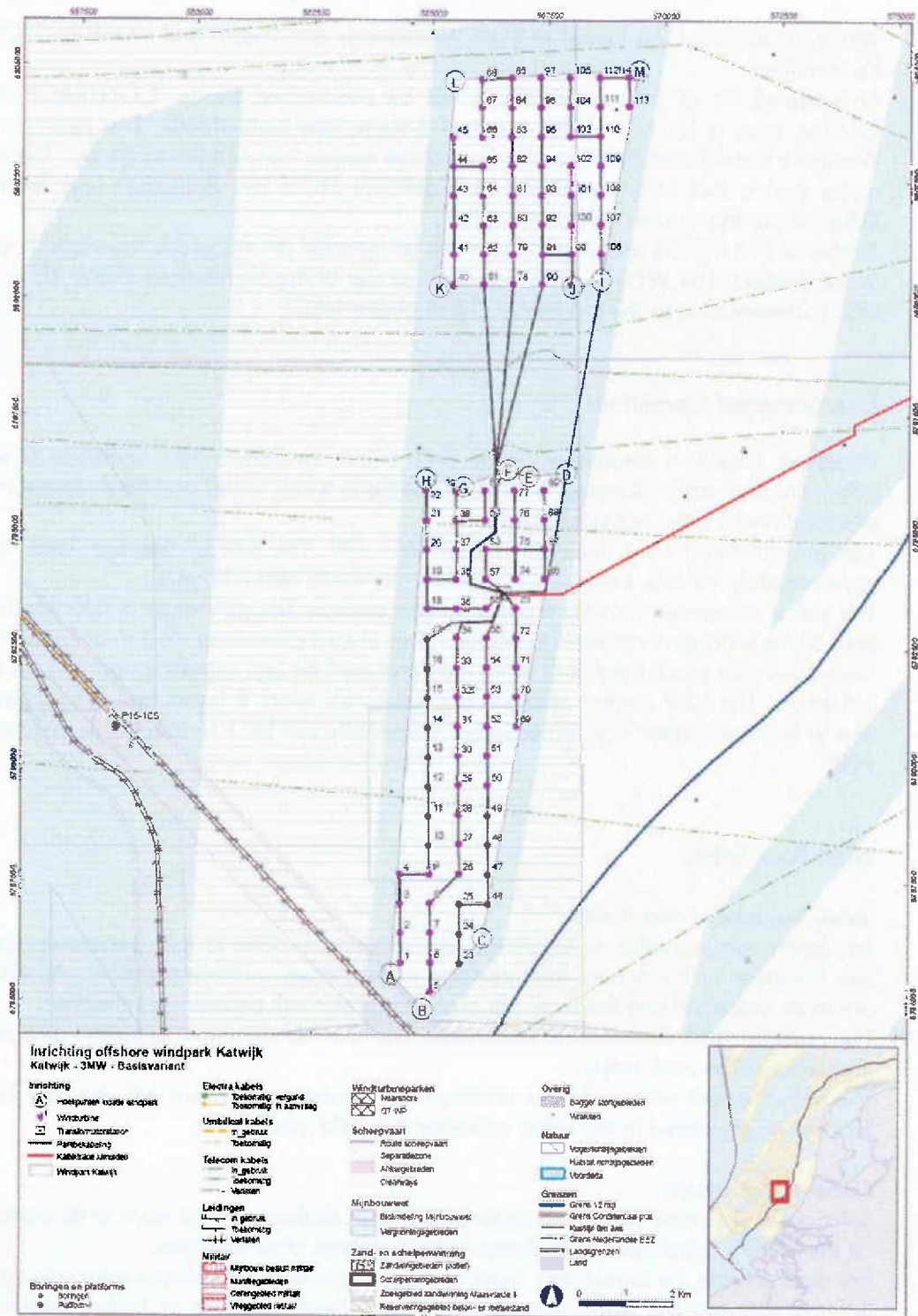
1.1 Objective and Scope

The objective of the plan is:

1. to identify, analyse, and register probable emergencies or disasters;
 2. To establish most probable cores of actions in the event of a disaster and
 3. To ensure that all personnel and authorities are informed and lines of communication are secured.
- The emergency plan has been prepared with the purpose of ensuring the greatest possible safety for the people present in the area marked (the work area) at Windpark Katwijk. The plan is founded on experiences from health and safety works in the offshore oil and gas industry and from other offshore WTG's.
 - The emergency plan shall be implemented in the whole project, and the responsibility for the plan shall lie with the site manager.
 - The plan details procedures and guidelines for dealing with possible emergency situations to enable the people involved to react quickly and effectively in any such situation that may arise in connection with activities at Windpark Katwijk construction site.
 - The contents of the emergency plan are to be considered minimum requirements, which under no circumstances may replace or diminish requirements from the authorities. Everyone present must meet the requirements at the Windpark Katwijk, including anyone visiting the site. In the event that the building contractor may implement more stringent requirements and procedures, these are to be followed.
 - The contingency plan covers installation of WTG foundations, substation and related work, laying of sea cables, raising of WTG's and related installation work.

Coordinates corner points Windpark Katwijk

Label in Map	X (ED50)	Y (ED50)	X (WGS84)	Y (WGS84)
A	564197	5785530	564194	5785409
B	564906	5796133	564903	5796012
C	565702	5795976	565699	5795855
D	566659	5796345	566656	5796224
E	567099	5796209	567096	5796088
F	567906	5796278	567903	5796157
G	566147	5786313	566143	5786192
H	564880	5784803	564877	5784683
I	568633	5800394	568630	5800273
J	568015	5800253	568012	5800132
K	565182	5800248	565179	5800127
L	565478	5804672	565475	5804550
M	569430	5804906	569426	5804784



Map showing the location of Windpark Katwijk



1.2 Contractors and Design

WEOM is Principal, on behalf of Shell WindEnergy and Nuon, and CONTRACTOR is to be identified.

An updated list of all subcontractors will be maintained by the CONTRACTOR. The location area is located off the coast of Katwijk, the Netherlands. The park is named Windpark Katwijk and the distances from shore ranges from 24 km to 36 km. The nearest major port is that of Scheveningen at a distance of 25 km. Rotterdam and Amsterdam Schiphol are the nearest full scale airports.

A total of 114 WTG's are planned and will be installed on mono pile foundations secured in the seabed. The WTG's will be erected on top of the foundations about 15 m above MSL corresponding to the top being 115 m above MSL.

1.3 Environmental Conditions

Windpark Katwijk is established in an area where environmental conditions at sea are influential and often changing. Interaction between wind, waves and tidal current must be expected and is often not predictable.

The pre-dominant wind direction is from W - SW. The annual average wind speed is approximately 10 m/s. Extreme wind speed may reach about 28 m/s.

The sea is influenced by tide, waves and sea current. The difference in tidal levels in the area of the wind park amounts to about 1,4 m at springtime and -1,0 m at neap time.

The waves may reach heights of more than 6 m and the sea current is normally up to app. 1,5 knots. The tidal current changes approximately every 6 hours and is strongest from one to two hours after high water where it normally can be 1 to 2 knots in direction 10°-190°.

1.4 Wind Park Safety

Safety Inspections and Audits

To identify risks, possible emergencies and accidents in order to take preventive action the Site Manager or his deputy shall perform weekly safety audits/inspections. All work sites are to be inspected and the work site evaluations and risk assessments checked.

The purpose is to demonstrate commitment of the management to safety, and motivate the personnel to work safely.

The management will conduct a minimum of 2 safety inspections per year per function. This will be registered in the safety calendar (See HSE plan).

General regulations

Safety helmets, safety boots and appropriate work clothes must be worn at all times. While on the WTG's, personnel must always work in groups of at least two.

For work outside the towers with open railings, personnel must always wear survival suits / floating suit and life vests. This also applies if there is a risk of falling overboard on account of the activities underway or the prevalent weather.

When handling goods or working outside the towers with open railings, personnel must always wear lifelines to prevent them from falling into the water. On the WTG's or the offshore substation there shall always be at least two persons together. Each work team shall bring portable, watertight, maritime VHF radio and a mobile telephone. At least one on each work team shall hold a valid VHF radio certificate issued by the proper authority. Fire fighting equipment, life buoy and first aid equipment including equipment for treatment of persons suffering from hypothermia will be available in each WTG and the offshore substation.

Where Patient is located
Name & type of vessel / WTG No.
Vessel's present position, course, speed & intentions
Vessel's last port & next port
Name, gender & age of the patient
Patient's symptoms, condition & medical history
Treatment already taken
Medication available on board

Communication

Every team must bring communication equipment (GSM mobile phones) and a land mobile VHF radio or similar for communicating with both people on other WTG's, substations and vessels in the area.

Medical advice

Requests from a ship at sea in the NL SAR Region for medical advice and/or assistance should be made to the nearest Coastguard MRCC/MRSC. The pro-word MEDICO should be used, giving priority over routine calls; and the Urgency signal PANPAN can be used if required. The Coastguard will link the ship to a hospital doctor.

Information required will include:

However, notification should not be delayed if all the information is not immediately available.

Assistance provided will depend on the circumstances, but may include the transport to the vessel of medical or paramedic personnel and/or the evacuation of the patient(s) by helicopter.

Emergency Box

Contents of emergency box for first aid treatment, medical treatment and food, water, sleeping bag etc. for survival in case that evacuation cannot take place are:

Number	Item	Remarks	Check
1	1 Emergency radio		
2	2 sleeping bags	water resistant	
3	Large first aid box		
4	1 fire extinguisher		
5	4 litres drinking water		
6	Field rations for 2 day	survival for 2 people	
7	1 small gas stove		
8	2 spare gas bottles		
9	1 pot / pan (cooking)		
10	4 blankets		
11	2 spare overalls (dry clothes)		
12	2 rain suits		
13	2 life vests		
14	2 boxes water proof matches / 2 lighters		
15	1 roll toilet paper		
16	Stretcher (with hoisting facilities)	lowering by rope, crane or helicopter	
17	1 flashlight and spare battery's		
18	1 pack signal flares / rockets		
19	Instructions on use of equipment and precautions to be taken in case of Emergency.	hypothermia, fire fighting, treatment on injuries etc.	

Emergency box shall be watertight and float/self-buoyant.



1.5 Contractor Safety

Contractors are to carry out their tasks safely and in accordance with rules and regulations and other requirements of the authorities and initiators requirements for work and safety. The contractors' health and safety documentation shall be reviewed and approved by appropriate authority before off shore work is commenced.

Contractors' rigs, vehicles, barges etc. shall be approved by appropriate authority based on a safety inspection/audit before they are allowed to enter the working area/wind park. Further contractors shall describe and demonstrate how they will ensure that their sub-contractors will do their jobs in accordance with the requirements outlined above.

1.6 Search and Rescue

1.6.1 Day-to-Day Operational Communication within the Wind Farm & MRCCs

During construction of the wind farm the CONTRACTOR's on site Office Building will be manned 24 hours a day 7 days a week.

Each off shore team member will be equipped with UHF radio and mobile telephone. The Service Vessel will be equipped with UHF radio, mobile telephone and VHF radio. The on site Office Building will be equipped with VHF radio and telephone.

The Crew Vessel will be capable and will maintain a listening watch on the VHF shipping channel 70, the VHF operating channel and the UHF service engineers' channel. The on site Office Building will maintain a listening watch on the same VHF channels and maintain a dedicated telephone line for the service engineers' communication or calls to emergency services. This telephone line will serve no other function.

In the event of an incident witnessed by the wind farm personnel or vessel crew, the Dutch Coast Guard will be notified. The Dutch Coast Guard will take control of any SAR operations and keep the wind farm personnel informed located both onshore and offshore.

The Dutch Coast Guard will contact the port control office in the event of an incident not witnessed or reported by the wind farm personnel and control any SAR operations accordingly.

The Port Control Office will provide all necessary information regarding any incident or information about the wind farm and its maintenance crews and vessels to the Dutch Coast Guard in order to assist it with its SAR function. If required, the wind farm will nominate a liaison officer(s) to access to supporting documentation concerning the wind farm.



The Crew vessel will not be allowed to leave the wind farm area if maintenance personnel are on the WTG's or substation, unless another capable vessel is on site.

1.6.2 The Rescue Co-ordination Centres (RCC's)

Search and Rescue Regions (SRRs)

Please refer to the chart below showing the search and rescue regions.

The relevant SRR for the Wind farm Katwijk is the Netherland region. The MRCC for the Netherlands region is located in Den Helder.

SAR Mission Coordination (SMC)

The Coastguard will be responsible for all SAR operations and the following is a description of their function:

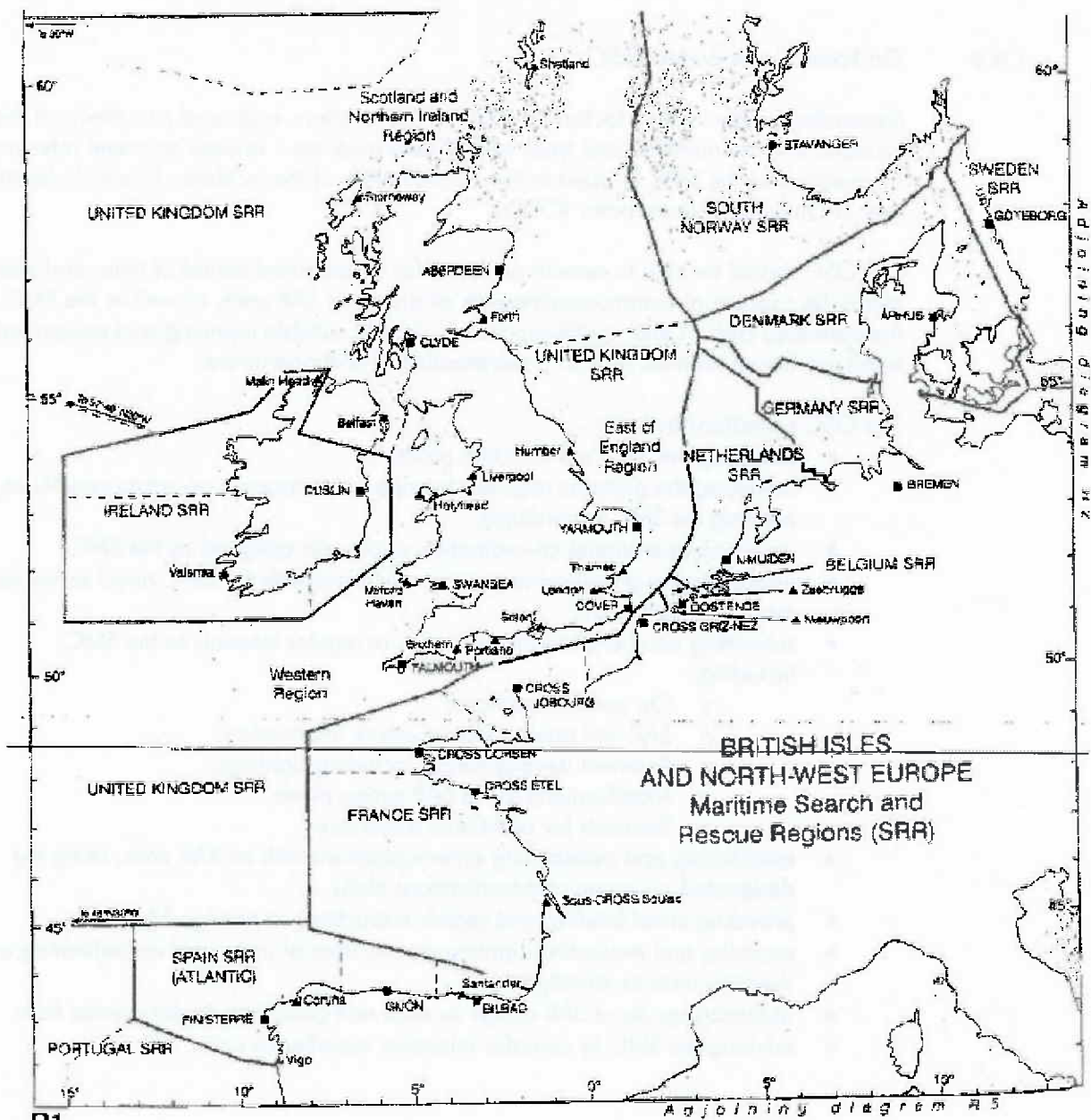
The basic requirements of a SAR organisation are the means to alert the organisation, detect ships, other craft and persons in distress, or potential distress, and affect their rescue. The main operational unit of a maritime SAR service is the rescue co-ordination centre (MRCC), from which SAR operations are co-ordinated and directed. When direct liaison between the co-ordination centre and the SAR facilities in a sector SAR region is not possible, e.g. because of inadequate communications, a rescue sub centre (MRSC) is established.

Each SAR operation is carried out under the direction and supervision of a SAR mission co-ordinator (SMC), operating from a MRCC/MRSC. The operational facilities of a SAR service are made available to it by various authorities. Whilst these facilities remain administratively under their respective authorities, they are co-ordinated by the SMC during SAR operations.

The SMC's functions include:

- (a) obtaining and evaluating all relevant information from appropriate sources;
- (b) initiating distress and urgency broadcasts as necessary;
- (c) alerting and tasking of appropriate resources;
- (d) determining search areas, formulating search plans and tasking resources effectively;
- (e) where appropriate appointing an On Scene Commander (OSC) etc, to exercise local co-ordination at the scene of SAR operations;
- (f) co-ordinating the actions of all units involved;
- (g) deciding, after consideration of all the available information, that there is no longer any probability of survival of any missing persons, and SAR action can be terminated.

Note: All SMC will be performed by the Coastguard for the Offshore Windpark Katwijk



1.6.3 On Scene Commander (OSC)

Depending on the various factors – including the location, scale and complexity of the incident, and the numbers and types of SAR units involved – various on-scene roles may be assigned by the SMC to assist in the co-ordination of the incident. This includes the role of On Scene Co-ordinator (OSC).

The OSC should be able to remain on scene for an extended period of time, and should ideally be capable of communicating with all on-scene SAR units, as well as the SMC, and the distressed craft. Other qualifying factors include suitable manning and equipment levels, on-board facilities and an understanding of SAR operations.

The OSC's functions include:

- executing the SMC's SAR action plans;
- modifying the plans as required to cope with changing on-scene conditions, advising the SMC accordingly;
- assuming operational co-ordination of all units assigned by the SMC;
- establishing and maintaining communications with the SMC direct or via the most suitable means;
- submitting numbered situation reports at regular intervals to the SMC, including:-
 - On scene conditions;
 - SAR unit arrival and departure information;
 - Pertinent developments, including sightings;
 - Modifications to the SAR action plans;
 - Requests for additional assistance;
- establishing and maintaining communications with all SAR units, using the designated on-scene communications plan;
- providing initial briefing and search instructions to arriving SAR units;
- receiving and evaluating sighting reports from all units, and co-ordinating and diverting units to investigate;
- obtaining results of SAR action as each unit completes its designated task;
- advising the SMC to consider releasing superfluous units.



1.6.4 The Dutch Coastguard

The relevant SRR for Katwijk Offshore Wind Farm is West of Netherlands Region

MSRC/MRCC Den Helder	Telephone: ALARM Number 0900 0111 Operational 0223 542300 Telefax 0223 658358 Telex 71088 Inmarsat-C: 424426512 Inmarsat-C: 424477710 (back-up) MMSI nr. 002442000 Radios: Vhf channel 16 DSC: (VHF channel 70 and MF 2187,5 KHz) SAR name : Den Helder Rescue.
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1.6.5 SAR units

The initiation and co-ordination of the response to a civil maritime SAR incident is the responsibility of the SMC at the appropriate MRCC/MRSC, who will make use of designated SAR units or additional facilities as required. For the Katwijk wind farm, the Coastguard will co-ordinate the SAR. The following facilities are available in this area.

A. Designated SAR units – surface

Dutch Lifeboat in Katwijk aan zee

Coastguard Emergency Towing Vessels – on station in IJmuiden

B. Designated SAR units – air

All NL SAR helicopters are available at 15 minutes notice day and night. All designated NL SAR aircraft are fitted with selected VHF(FM) Marine Band channels. A wide range of detection & rescue equipment is carried.

C. Additional SAR units

Vessels near the incident

Such non-designated aircraft or ships as the civil operating agencies can assign.

1.6.6 Suspension/termination of SAR action

The decision to terminate SAR action rests with the SMC, but will only be taken when there is no longer considered to be any probability of survival of missing persons, after consideration of all available information and consultation with other authorities involved.

SAR action may also be temporarily suspended by the SMC, after due consideration & consultation; for example, in darkness when no night detection aids are available, or in bad weather when to continue would place available SAR facilities at undue risk.

1.6.7 Periodic Exercises

Exercise objectives should be carefully identified and agreed by all parties, and exercises to test SAR plans should be co-ordinated with other requirements. When an exercise is required, Site manager should identify when and where the ship will be available, co-ordinating the exercise with maintenance schedules etc.

Depending on the identified objectives, exercises may be limited in scope; and other types of exercise should also be considered – ‘communications’ or ‘tabletop’ exercises, for example.

The need for careful co-ordination is clear. An overall programme of exercises should be worked out by the building contractor and the relevant SAR services in conjunction, to ensure that, so far as possible, all staff are able to participate over time, and that the building contractor exercises with each of the SAR services along its routes, where practicable.

It is also recommended that all company emergency response staff (ashore and afloat) attend one of the SAR seminars held regularly at Coastguard Rescue Centres around the NL.

1.6.8 Communications Plan (Coastguard)

The aim of a SAR communications plan is to avoid overuse/misuse of facilities available. R/T frequencies in use will usually be the most suitable distress frequency plus internationally accepted on-scene working frequencies.

Additional means of communication (satellite, fax, etc) may be used to pass detailed information such as search plans.

In incidents involving many units and/or the need to pass much detailed information, the communications plan would be as follows:

- (a) the main co-ordination frequency (Vhf channel 16 , DSC. VHF channel 70 or 156.525 MHz or MF 2187,5 Khz), used by the casualty, the MRCC/MRSC, the OSC and an Aircraft Coordinator (ACO) as applicable. Other units should monitor this frequency for broadcasts, etc;
- (b) an on-scene surface unit working frequency (usually Channel 17), used by the OSC and surface SAR units;
- (c) land unit co-ordination & working frequencies as applicable;
- (d) one or more frequencies not already in use, used by individual SAR units with the permission of the OSC/ACO in order to work directly with each other as required (e.g. during the transfer of survivors).

Search Planning (Coastguard)

All Coastguard MRCC/MRSC's have search planning computers, and will provide SAR units with search areas and sub-areas, suggested search patterns, track spacings, etc.

SAR units should provide the co-ordinating MRCC/MRSC with as much information as possible relating to search conditions; e.g. on-scene weather and sea current conditions, SAR unit capabilities, and estimates of search quality. All sightings or finds (e.g. of wreckage possibly from the casualty) should be reported to the MRCC/MRSC

2. ACCESS TO OFFSHORE WORK SITES

2.1 General

The work area at Windpark Katwijk is declared as prohibited area in the official "Notices to Mariners". Regulations for vessel access to the work area are issued by North Sea Agency. Unauthorised vessels or pleasure crafts entering the area shall be approached by the Stand By Vessel and refused admission. In severe cases the intruder may be reported to the police and other proper authorities.

Appropriate Dutch authorities are to be kept informed about the main activities in the area such as diving, cable laying and heavy lifts.

2.2 Personnel

No one is permitted to access the work area without a valid ID card issued by the CONTRACTOR

To obtain this admission card all offshore personnel shall have completed prescribed offshore course(s) comprising basic fire fighting, first aid treatments, and evacuation from the nacelle and sea survival.

2.3 Visitors

In exceptional circumstances, the Site Manager may grant dispensations from this rule on condition that the person in question remains in the company of a person with an ID card at all times. The visitor is to receive information about the safety procedures and this contingency plan. Groups of visitors are not to exceed a suitable size.

2.4 POB Lists

A system has been set up for the registration of persons on board (POB) with regard to vessels, WTG's and foundations. The system ensures that the Site is constantly aware of the location of every single person involved in the offshore project. The POB system also contains information about the next of kin (NOK) of each person. The system will be described in details in the HSE Plan.

A list of names is to be placed at the Site Managers office. The list shall indicate where to each person will be transported.

When a person is moved from one location to another the boatman shall report this instantly to the Site Manager who keeps the list updated.

Returning onshore again each individual shall report to the Site Manager who shall update the POB list accordingly.

It is extremely important that the POB system is kept updated at all times, so the Site Manager has the necessary POB information in case of an emergency situation.

The Police are responsible for informing next-of-kin. In major incidents a Police Casualty Bureau will be established as a central contact point for those seeking or providing information about persons who might have been involved, to collect data,

and to collate records. Contact telephone numbers will be disseminated from the Site manager to the Police.

In all these matters the Police will liaise closely with other authorities involved, including the Coastguard and the Site manager.

In case of a catastrophic incident the most likely scenario of an incident on / near the wind farm has limited number of wind farm personnel, in which case most of the shore reception arrangements will be catered for in the Katwijk wind farms facility.

However, overall co-ordination of shore reception arrangements is the responsibility of the Police. This includes procuring and prioritising resources such as temporary accommodation, emergency feeding and rest centres, transport & other equipment, etc. Police documentation teams will staff each landing site and each hospital, mortuary & survivor reception centre. Landing sites are designated in port & local authority emergency plans.

The Police are also responsible for security & preservation of the scene (so far as possible); news media control; visits by VIP's; and subsequent investigation in parallel with agencies.

2.5 Boat Transfer

All transportation to and from offshore work sites will take place using boats approved by the main contractor and appropriate Dutch maritime authorities. Boats are to be equipped enabling man over board and rescue operations. The boatmen shall all have completed appropriate offshore courses.

Embarkation and debarkation at the base harbour must be performed via a secure, safe and suitable pier or gangway that shall be positioned in such a way that the risk of stumbling and falling over board is minimised. Every vessel sailing to the construction site must keep a logbook. All people sailing offshore must sign this book at Embarkation and Debarkation. It is the responsibility of the captain of the vessel that this log is kept up to date.

The captain of the vessel is to ensure that the passengers receive the necessary safety instructions. During the voyage, all instructions and recommendations from the captain must be observed and followed.

The captain must continuously monitor developments in the weather. If bad weather should arise, he shall inform the people on the WTG's and on the site so that the WTG's can be evacuated in good time if necessary. The captain has sole responsibility for determining whether a vessel operation can be performed safely or not.

**IF AN OPERATION CANNOT BE PERFORMED SAFELY,
IT MUST NOT BE PERFORMED AT ALL.**

2.6 Boarding Offshore Installations

Access to the WTG's will be by use of small crafts, Rubber dinghy (Zodiac) or by means of crane and basket. Personnel baskets should only be used in exceptional

circumstances, i.e. emergencies or when transfer is essential and it is not practicable to get access by less hazardous means (see Guideline/HSE plan). Cranes used for personnel transfer have to be equipped with an "Anti-two-blocking" device. The lifting procedure shall be reviewed and approved by the HSE Manager and the Site Manager prior to any lift.

Survival suits/floating suit and life vests must always be worn when entering and leaving the WTG's.

The Captain has to give his approval to enter the WTG. At all times there must be visual contact between the vessels Captain and the Boats man.

3. EMERGENCIES

3.1 General

If during the execution of the project an emergency takes place it shall be classified according to the table listed below.

Category I	Category II	Category III
Diver's paralysis	Fire / Explosion	Environmental accident
Collision – aircraft	Sabotage	Vandalism
Acute illness	Industrial accident	Threat
Man over board	Collision – vessel	Drifting vessel
Thunder / lightning strike		Bad weather

Category I incidents require a faster response than Category II incidents, and so on.

- Appendix 1 - alarm checklist;
- Appendix 3 - contacts;
- The following numbers can be used in emergency situations

Diver's paralysis Man over board Fire / Explosion Collision – vessel Environmental accident Drifting vessel	ALARM to MRCC Den Helder INFORMATION to Site: XXXXXXX
All other incidents	ALARM to Emergency Services INFORMATION to Site: XXXXXXX

Contact the people listed below for information and, if necessary, take additional action in accordance with the indications opposite the emergency situations in question.

	I	II	III	Who to Alert / Inform:		Responsible for alert or inform ?
Dive's paralysis				MRCC		Site Manager
Collision – aircraft				Police Department		Site Manager
Acute illness – emergency				The Maritime Authority		Site Manager
Man over board				The Labour Inspection		Site Manager
Thunder / lightning strike				Project Manager		Site Manager
Fire / Explosion				Company Manager		Project Manager
Substance				To be decided		
Industrial accident – evacuation				Doctor on call		Doctor on call
Collision – aircraft				HRA Decompression chamber		HRA Decompression chamber
Environmental accident				Diving co-ordinator		Diving co-ordinator
Vandalism				Insurance Company		Management
Threats				Next of Kin		Police, Management, community
Drifting vessel						
Bad weather						

X: Alert

O: Information

The Site Manager is to be kept informed off all incidents and steps taken. The Site Manager is to be informed immediately about all accidents and emergencies. Are human lives endangered the MRCC will be alerted first and the Site Manager informed immediately after.

3.2 Collision – aircraft

In the event of a collision between, for example, an aircraft and a WTG or a vessel, notify the MRCC directly.

MRCC will notify the police or others by arrangement. Search and rescue activities will be initiated, the next of kin will be notified, and a media service will be set up.

3.3 Man Over Board

If a person falls in the water while boarding or disembarking a vessel in a harbour, the observer must inform the captain of the vessel and start procedures to rescue the person using the means at hand (lifebuoy, lifebelt, boathook, rope ladder etc.).

If a person falls over board during a voyage between the harbour and the wind park, the captain of the vessel must be alerted immediately by the cry of "MAN OVER BOARD". At the same time, a lifebelt or other floating aids must be thrown to the person in the water. The observer must constantly watch the person in the water and point towards this person to direct the captain in the right direction. The horn on the boat/vessel must be activated to attract the attention of other vessels. Warning to ships in the area may be given by VHF is necessary.

Pending on the situation MRCC will be alarmed for external assistance. The captain must then communicate the MOB alarm to MRCC and inform Site Manager. The rescue operation must be carried out in accordance with the internal procedures of the vessel.

Once the person who fell overboard has been rescued and is back on the vessel, a crewmember or passenger must administer first aid. The captain must then sail to the mainland so that the person can be taken to hospital for additional examinations. The Site Manager and MRCC must be informed as soon as the rescue operation has been successfully completed.

Also if a person falls into the water from one of the offshore substations the other personnel must alert any vessels in the area, and must also contact MRCC, which will then initiate a SAR operation according to the applicable procedures. Throw out the life buoy and assist the victim without putting oneself into risk.

If the person who has been rescued is suffering from exposure, refer to the guidelines for treating people with hypothermia. See 3.4.

When the wind park installations are manned a stand by vessel shall be available in the area to provide man overboard and evacuation readiness within 10 minutes.

3.4 Hypothermia

Persons who have suffered from over exposure to cold weather or water often suffer from hypothermia. In such case action shall be taken according to procedure regarding treatment of persons suffering from hypothermia.

- Lift the victim out of the water in horizontal position if possible
- Avoid unnecessary movement of the rescued person
- If the victim is not breathing, give artificial respiration – NOT cardiac massage
- Remove the wet close and wrap the rescued person into blankets
- Place the rescued in a not heated room
- Evacuate immediately for hospital treatment onshore

3.5 Fire fighting, chemical hazards etc.

The priorities in the event of fire are STEM:

- Save people
- Trigger alarms
- Extinguish the fire
- Minimise damage

Dutch Fire Services are not obliged to respond to incidents at sea, but may do so. Whether Fire Service assistance can be obtained, and what form that assistance will take, will depend upon the circumstances of the incident. Early requests for assistance in the Dutch SAR Region must be made to the MRCC/MRSC. Transport to the vessel will be by helicopter and/or surface craft.

Fire Service jurisdiction does not extend to any vessel at sea; but fire fighting and rescue teams when on board are under the direct command of the senior Fire Service officer, who will take recognisance of whoever is in command of the vessel.

The Fire Service will require the assistance of the vessel's crew in providing and, as necessary, explaining plans and stability details; in communications; as guides; and to handle equipment.

In order to decide whether the Fire Service can assist and, if so, what form that assistance will take, the following information will be required:

Exact location of the vessel	
Vessel's name, type and port of registry	
Vessel's gross tonnage, length & freeboard	
Vessel's cargo & type of stowage	
Vessel's current condition	
Whether the vessel is under power, and the type of propulsion	
Number of people aboard	
Nationality of the crew and whether there are potential language difficulties	
Sea state and weather conditions/forecast	
Contact details of the vessel's operators/agents	
Nature of the emergency (e.g. extent & location of fire, nature of chemical hazard, whether persons are trapped or missing, etc)	
Potential means of access & egress to/from the vessel and the relevant compartments	
Whether the vessel's fire-fighting appliances are operable	
What fixed fire fighting systems are available & whether they have been operated	
Whether plans of the vessel are available	
Any problems which might hamper operations	
Any other relevant information, including the presence on board of hazardous substances (whether immediately involved or not).	

Fire on vessel

In the event of a fire on board a vessel, the captain must alert MRCC and other vessels (if any) and then attempt to extinguish the fire in accordance with the internal procedures of the vessel. All passengers must follow the instructions issued by the captain.

Fire on/in WTG/substation

In the event of fire in one of the WTG's, offshore substation or the meteo mast the stand by vessel to be alerted immediately. Work to fight the fire must be started with the extinguishers at hand. The fire must be extinguished if possible, but the applicable maxim is: "people before property". Warning: During fire toxic gas emissions can be developed.

Activate the emergency stop and disconnect the main switch if possible. If personnel shall to be lowered down during a fire, pay attention to the risk of debris falling from the WTG and stand in a safe place until evacuation.

If possible try to remove/eliminate flammable materials/liquids.

If the fire cannot be extinguished the installation shall be abandoned.

3.6 Acute Illness

If acute illness occur the stand by vessel is to be called for evacuation of the patient. If evacuation cannot be carried out safely by the stand by vessel the boatman is to request MRCC assistance.

Medical advice can be obtained from MRCC via maritime VHF or telephone.

The Site Manager to arrange further medical treatment by a medical doctor or at the hospital if required.

For illness reporting reference is made to the HSE plan and the alert plan in part 5 of this plan. The Site Manager must be informed about all evacuations due to illness, and an illness report must be completed.

3.7 Evacuation

Industrial accident

If a person suffers a serious industrial accident, notify the Emergency Services Switchboard MRCC 0900 0111 to initiate evacuation procedures to transfer the injured person to shore for treatment.

Coordination from the Site office, or other available resources (vessels, construction workers, etc.). This depending on the evaluation carried out by MRCC.

The Site Manager must be informed of all accidents that result in injury. He must then identify and remove the cause(s) of the accident and report to the authorities in accordance with the HSE plan. Casualties/victims have to be evacuated to hospital for examination and health check.

WTG's

Normally, personnel can evacuate the WTG by climbing down the ladder from the WTG platform to a vessel docked to the WTG with its bow pressed up against the ladder.

All WTG fitters have received training in saving themselves and injured or sick colleagues from any place in the WTG's by using the special altitude rescue equipment located in the WTG's. CONTRACTORS' evacuation procedure has to be followed. If a person is to be evacuated by helicopter from one of the WTG nacelles or from the offshore substation because of injury or illness, the rescue and evacuation

equipment of the WTG or the offshore substation is to be used. Detailed instructions can be found with the equipment.

In all evacuation situations via the air the directions of the helicopter crew is to be followed strictly.

Offshore substation

Evacuation from the substation can take place by helicopter, by MOB boat, by life rafts, or via a ladder to the water. Design of escape routes and procedures shall be prepared in co-operation with designer of sub station.

Evacuation from vessels, rigs, barges, etc.

The evacuation of injured or sick personnel from vessels, rigs and barges is initiated via MRCC in accordance with the normal procedures of the vessel.

Evacuation by rescue helicopter is performed according to MRCC's normal procedures.

Site Manager is to be informed of all evacuations.

3.8 Diving Emergencies

Diver's paralysis (divers) Specialists are to handle diving incidents. The diving contractor shall submit a contingency plan providing detailed emergency procedures for diving operations.

3.9 Explosives and Ammunition

1. A non-intrusive survey and clearance operation will be carried out on selected areas of the Katwijk wind farm before the construction of the wind farm.

2. There may be a requirement to carry out other engineering works in uncleared and uncertified areas in connection with the wind farm. Activities could include the use of spud legged vessels or the mooring of vessels or additions to the wind farm.

Aim

3. The aim of this clause is to identify the risk mitigation strategy for those areas of the wind farm not covered by the survey and clearance operation.

Threat

4. The explosive ordnance threat to the Katwijk Wind farm remains unchanged from that used to determine the survey and clearance operation. Essentially the threat is posed by unexploded bombs, sea- and land mines with a mass in excess of 50 kg.

Risk Mitigation Strategy

5. While the survey and clearance operation might (not) have resulted in the discovery of ordnance with a mass in excess of 50 kg, this does not infer that there are no items of ordnance of 50 kg and above in the area.

6. The risk mitigation strategy is to identify the likely activity and relate this to the appropriate risk mitigation measure. The likely engineering activities are:

a. Sinking Further Pylons – Therefore before any further piling takes place, a non-intrusive survey and target investigation must be carried out. Only when the area to be piled or used during the piling operation has been certified clear should piling take place.

b. Excavating Further Cable Trenches – This activity, when using a plough, is more likely to exert pressure rather than shock into an item of ordnance. However, disturbing an item of ordnance significantly raises the risk of it functioning. If trenching is carried out using an excavator or jetting, the risk then rises to that of a piling operation where direct contact with the ordnance is likely. Irrespective of the trenching methodology, a non-intrusive survey and associated target investigation operation must be carried out when trenching is planned.

c. Mooring Vessels – Mooring of boats or further geotechnical/site investigation. The risk is that in dropping an anchor or spud leg, ordnance items, if present, may be struck. In most situations once an anchor has dropped it will be cushioned by the silt and sea bed, and merely present a pressure on the ordnance. Similarly, the sinking of a spud leg imparts pressure, not shock. However, it is not unknown for an item of ordnance of 50 kg and larger to be moved by tidal action and therefore migrate. It is therefore essential that risk assessment is undertaken. Following this a non-intrusive survey and follow up target investigation may need to be carried out where mooring or further SI is planned.

Summary

7. In summary, the threat posed by unexploded ordnance and the consequences of an energetic event are such that proactive risk mitigation measures should be taken in respect of all engineering or associated works. A risk assessment must, however, be carried out to confirm the need for survey and clearance on a case-by-case situation based on the nature of the intrusive engineering works. Typically, a topographical survey which has no intrusive elements will not require any EOD action.

8. All non-intrusive surveys should be carried out using a multi-sensor approach. The use of a single sensor technology will only provide limited data. The use of confirmatory sensors will greatly enhance the quality of the survey and allow more effective target definition, which will result in a more cost-effective investigation operation.

Certification

9. Ordnance free certification is only valid at the time of the survey/clearance operation and does not take into account mobile targets, which could migrate into previously cleared areas.

Instructions

10. It is essential that:

a. All future engineering works involving intrusive work, mooring or trenching should be preceded by a risk assessment.

b. All intrusive works should be preceded by a multi-sensor non-intrusive survey and clearance operation.

c. Note is taken of the possible migration of ordnance into recently surveyed and investigated areas when conducting further intrusive work in recently cleared areas.

3.10 Drifting vessels/objects

There is a risk that vessels in the area may drift on account of engine failure, steering defects or loss of power. Barges and vessels being tugged may begin to drift if the tugging cables break. Both situations constitute a collision risk as regards diving operations and heavy lifting with specialist vessels – in that there is a risk of collision with the WTG's, substation and/or other vessels.

MRCC will be notified of situations involving observations of drifting vessels, etc. in the vicinity of the wind farm Katwijk and will be able to send warnings out to shipping traffic. Vessels and Traffic coordinator must therefore monitor such incidents closely and instigate evacuation of the WTG's if the situation demands such action.

If MRCC gets information about drifting objects in the area they are to inform the Site Manager. The Site Manager then informs and takes the necessary precaution to protect the personnel and the installations. If a vessel engaged in work at the wind park gets information about drifting objects it shall inform the Site Manager. The Site Manager informs the MRCC and takes further action in co-operation with MRCC.

3.11 Collision with vessel, rig, mono pile, WTG, substation.

Contact MRCC in the event of a collision with a vessel or between two vessels. Everyone in the area is obliged to help to find casualties and/or fatalities, which are all to be transported to nearest Harbour. See 3.2. In case of collision oil spill may occur. Handling is to take place immediately as well as reporting. See 3.12

3.12 Environmental Accidents

The risks of environmental accidents are considered low. Oil spills may occur in case of equipment failure, such as broken hydraulic hoses, oil filling/exchange etc. Should this situation happen the spill is to be stopped/minimized immediately and the incident reported to the Dutch Coast Guard via the MRCC. The North Sea Agency will contact the Site manager to take appropriate measures. Discharge of non-water miscible flammable liquids, can lead to a concern, due to the fact that they can form a top layer. These could in worst case ignite considerable distances from the WTG or vessel after "discharge".

Equipment to be used

- Floating barrage
- Absorbent material
- Sandbags
- Rags, buckets
- Drip tray

- Vacuum cleaner, suitable for absorption of liquids, Personal Protective Equipment (PPE) E.g. gloves, eye protection, breathing respirator

Handling and reporting

- Spill involving hazardous materials shall be contained to prevent spread of the material to other areas/environment. This may involve use of temporary diking, sandbags, dry sand, absorbent pads/material.
- Treated material shall be absorbed into inert carrier material to allow the material to be cleared up and removed to a safe place for disposal or further treatment as appropriate.
- Oil-containing material shall be stored in a proper way, and brought to shore for further handling. All resources in the area are in duty to help in case of an environmental accident/leakage. In case of environmental accident the Dutch Coast Guard shall be contacted via the MRCC. The North Sea Agency will contact the Site manager to take appropriate measures.

Waste

All waste/elements has to be collected and brought to shore. Observation of large floating objects, or anything that could be dangerous for vessels, rigs, and environment shall be reported to Site Manager and collected As Soon As Possible (ASAP). the Dutch Coast Guard shall be contacted via the MRCC, when waste cannot be collected by own means. The North Sea Agency will contact the Site manager to take appropriate measures. It is not allowed to accumulate waste. Waste removal procedure shall be adopted.

3.13 Major Material Damage

Major material accidents, which do not endanger people, must be brought under control as soon as possible, and steps must be taken to ensure that the damage cannot develop so as to pose a threat to human life and well-being. The Site Manager is to inform the Emergency Response Committee.

If the situation deteriorated causing threats to the personnel steps to secure the personnel's health and safety have the highest priority. The Site Manager is to call the Emergency Response Committee.

3.14 Bomb Threats, Sabotage, Vandalism, Hostage-Taken etc.

Should the project be subject to any kind of terror directions for initial handling of the most common problems are given below. It is extremely important to take notes.

Bomb Threats

In the event of bomb threats or hostage situations, the Emergency Services Switch-board of the MRCC **0900 0111** must be alerted without delay.

The guidelines for dealing with bomb threats are detailed in appendix 2.

If a bomb threat is developing the following guidelines and checklist shall be followed:

- Be calm and obedient
- Do not interrupt the person who is calling

- Keep the conversation going by asking questions
- Repeat the bomb threat – if possible word by word
- Take notes.

Sabotage

In the event of sabotage, contact the Emergency Services Switchboard 0900 0111.

Vandalism

Vandalism to WTG's, vessels and equipment must be reported to the police (for registration) and the insurance company.

3.15 Extreme Weather Conditions

Ship captains and Site Manager must continuously monitor weather conditions. If the captain evaluates that it is not safe to land or disembark personnel from a vessel or a WTG, such operations must not be performed.

During extreme weather conditions such as strong wind, heavy sea, extreme tidal phenomena's with high sea state, strong sea current, fog etc – it may be necessary to postpone the evacuation of personnel from the WTG's – so safe evacuation is not possible, persons at the wind park are to stay in sheltered areas i.e. in the bottom of the tower of a WTG. The site Manager is to be contacted and his instructions followed.

3.16 Thunder and Lightning

If evacuation cannot take place in due time everybody on board are to act in accordance with this instruction in appendix 7.

3.17 Evacuation to Shore

Scheveningen Port is point of the daily boat transportation to/from Windpark Katwijk and the destination for routine evacuations.

Injured and ill persons are to be evacuated from the wind park by vessel for medical treatment. They can be picked up by ambulance in the harbour of Scheveningen.

Scheveningen Port

Distance approx. 25 km and sailing time to the breakwater is approx. 50 minutes at 20 knots.

4. EMERGENCY RESPONSE COMMITTEE

4.1 Objective

To be co-ordinated with the Authorities

In case of a major accident or long lasting emergency situations an Emergency Response Committee (ERC) will be established. ERC shall monitor the emergencies and ensure that they are dealt with promptly, correctly and efficiently. The purpose of any safety operation is to save human lives, protect persons' health and minimise damages to the environment and equipment. The Site Manager is to decide when to call the ERC.

Members of ERC are

- The Site Manager (Chairman);
- Representatives from relevant contractors;
- Representatives from relevant authorities.

The representatives shall be appointed when the project is commenced or when a contractor is joining. Suppliers are also to be appointed and to step in when required.

The Chairman shall establish a logbook every time the ERC is called. All incidents and actions initiated of the ERC in connection with the emergency are to be recorded (See attached log book sheet – appendix 6).

The ERC is responsible for

- Communication to offshore based units;
- Provision of an updated POB list;
- Communication with the authorities and the contractors;
- Provision of necessary specialist assistance;
- Information of next-of-kin via the police or the company;
- Providing psychological assistance if required;
- Handling the news media.

A command station is to be set up with a command post in an especially equipped room. The command station and command post are to be fitted with the necessary communication equipment. Furnishing of the room is described in appendix 5.

4.2 Psychological Crises Assistance

The Site Manager is to provide for psychological assistance as an option for those who have been involved in an accident.

4.3 Handling of News Media

To ensure the news media's gets factual information about the incident all press contacts shall be directed to the Site Manager. In this way avoided is that persons who has been involved in an accident are to pressure from reporters and photographers

etc. at a time where the person still may be shocked from the experience of the incident.

Press statements are endeavoured to be co-ordinated with the police, the MRCC and other authorities in order to ensure the factual information released and to avoid contradiction between the involved parties.

Press releases are to be printed and distributed to the members of the Emergency Response Committee, the main contractors management, contractors and the authorities. The attached sheet may be used. Press statement sheet is shown in appendix 4.

5. COMMUNICATION AND ALERTING

5.1 Communication

A list of channels, frequencies and telephone numbers will be kept and added to this plan at a later date as appendix 3.

5.2 Contacts

A list of contacts for the project can be found under appendix 3.

5.3 Alerting flowchart

The alerting flow diagram will be added at a later date.

5.4 Alerting Check List

See appendix 1.

6. ORGANISATION AND RESPONSIBILITY

The organisation chart will be added at a later date.

6.1 Site Manager

The Site Manager is responsible for co-ordination of the work and the health and safety issues related to the project. He shall ensure that all safety procedures, safety policies and requirements of the authorities are adhered to.

In emergency situations he is responsible for alerting and informing relevant parties.

6.2 Supervisors

Supervisor's responsibility is that all work and operations under his supervision take place under healthy and safe conditions and in accordance with existing procedures and authority requirements.

The supervisors shall:

- Ensure that their personnel are trained to carry out the tasks safely.
- Ensure that the personnel have been informed about risk and precautions before the work commences.
- Ensure that personnel protection equipment is present, adequate and in good condition.
- Report all first aid treatments, near-miss incidents and accidents to the Site Manager.
- Set a good example for his employees and put safety on the agenda.

APPENDIX 1 ALARM CHECK LIST

Place:	Date:
Name:	Signature:

Who is calling?	
Where are you calling from?	
Where is the emergency?	
What happened?	
When did it happen?	
What sort of help is needed?	
What measures have already been taken?	
Who has been notified?	
How many need help?	
How many are there on the scene of the accident?	
How many have been evacuated?	
How many are dead?	
What sort of material damage is there?	
What is the weather like? (wind speed and direction, visibility, wave height and speed, air temperature, water temperature)	
When is the next report expected?	

Emergency switchboard MRCC Phone 0900 0111.

APPENDIX 2 HOSTAGE SITUATIONS AND BOMB THREATS

Complete the checklist below during the telephone conversation if possible.

Contact the MRCC and police as soon as possible, and agree subsequent actions with them.

Bomb threat

- Remain calm and attentive
- Do not interrupt the person who is calling
- Maintain a dialogue by asking questions
- Repeat the bomb threat – word for word if possible, take notes.

Ask the following questions and repeat the answers; take notes

- Where is the bomb?
- When is it set to detonate?
- How big is the charge?
- What is the purpose of the action?
- Who is responsible for the action?
- Are you aware that many people may be injured?
- How can we save the people on board?
- Do you know anyone on board?
- Where are you calling?
- What is your name? Whom am I speaking to?
- Other questions and answers – keep asking questions.
- Date: Time: Call received by:

During the conversation, attempt to check the following:

Man Woman Boy Girl Approx. age ...

Voice

Loud..... Dark..... Angry..... Lisping.....

Quiet..... Light..... Soft..... Distorted....

Dialect/accnt/choice of words:.....

Dutch dialect:.....

Other language:.....

Strange choice of words:.....

State of mind

Relaxed:	Nervous:	Excited:	Laughing:	Traffic noise:	Voice:	Nothing:
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Did it sound like the caller was familiar with the place or knew people on site?

Yes:	No:	Don't know:
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Hostage situations, sabotage

The following checklist can be used in the event of hostage situations or sabotage

- Be attentive
- Be careful – especially if the hostage-taker or terrorist seems nervous

Attempt to discover the following information:

- Name of the ship/rig
- Its position
- The weather conditions
- Number of people on board
- The method of attack
- The name of the organisation responsible
- The number of hostage-takers or terrorists
- What weapons do they have
- Demands/threats
- The number of hostages
- Inform the Site Manager

APPENDIX 3 LIST OF CONTACT PERSONS

Authority – Position	Name	Phone
Rescue Service		
MRCC	Den Helder Rescue	ALARM Number 0900 0111 Operational 0223 542300 Telefax 0223 658358 Telex 71088 Inmarsat-C: 424426512 Inmarsat-C: 424477710 (back-up) MMSI nr. 002442000 Radio: Vhf channel 16 DSC. (VHF channel 70 and MF 2187,5 Khz) SAR name : Den Helder Rescue.
Doctor on call		
CONTRACTOR offices	Fax:	
Site Manager		
Safety Manager		
Health & Safety Coordinator		
Traffic/Vessel Coordinator		
Diving Coordinator		
Project Manager		
WTG's	Fax:	
Project Manager		
Site Manager		
Erection Manager		
Safety Coordinator		
Foundation		
Project Manager		
Site Manager		
Erection Manager		
Safety Coordinator		
Cables	Fax:	
Project Manager		
Site Manager		
Safety Coordinator		
The Maritime Authority		
Labour Authority		
Police		
HOSPITAL		
Airport		

APPENDIX 4 PRESS RELEASE

Subject:	Date: Time: No.:	
1. Event (what happened?)		
2. Time (When did it happen?)		
3. Place (Where did it happen?)		
4. Parties concerned (Who was involved in the event?)		
5. Status (Who did what?)		
6. Action (What actions will be taken to get the event under control?)		
7. Additional information		
8. Signature and title		

APPENDIX 5 EMERGENCY ROOM

There is a room for emergency purposes at the CONTRACTOR's Site Management.

The room is located as follows:

XXXX

XXXX

XXXX

The room contains:

- Conference furniture
- Possibilities for connecting computer to the Internet
- Overhead projector
- White boards
- Flip-over
- Posters showing the wind park
- Access to nearby photocopier
- Phones – *Please note, these numbers must not be given to outsiders!!!!*
 - Phone 1: XXXXXXX Police, authorities, etc.
 - Phone 2: XXXXXXX
 - Phone 3: XXXXXXX
 - Fax: XXXXXXX
- Nearby canteen
- Nearby toilet
- Land mobile with connection to HRA module
- Nearby VHF connection

APPENDIX 6 ERC LOG

Location (WTG, offshore substation, vessel etc.).	Wind Speed	Wind Direction
Filled in by	Sea State	Sea Direction
Date	Air Temperature	Water Temperature
Signature		

Time	Incident/Action	Remarks

APPENDIX 7 THUNDER AND LIGHTNING

Thunder and lightning are extremely dangerous at sea. During thunderstorms there are no transport to/from the wind park and between the installations. Is there a risk for an upcoming thunderstorm the wind park shall be abandoned.

Risks

Staying outside at the offshore substation and the WTG's (blades, nacelles, tower) there is a risk to be struck directly by lightning, to be exposed to part of the lightning current and to fall down because of electrical shock or because of the blast from the lightning conductor.

In hubs or nacelles one may be exposed to parts of lightning current with subsequent risk of falling down caused by electrical shock.

On the ladders inside a WTG tower or the offshore substation one may be exposed to minor parts of the lightning current and fall down because of suffering electrical shock.

Outside WTG towers on the off shore foundation one may be exposed to side flashes whether the tower is touched or not.

On ladders leading to off shore boat landings people may be exposed to parts of the lightning current and fall down caused by electrical shock.

People located under WTG rotors may be hit by parts of the blades blasted away by lightning strikes.

Precautions

All works at the wind park shall be stopped when **lightning is being seen but thunder not heard**, the distance of the thunderstorm being 10 – 30 km. The wind park can be abandoned.

All works at the wind park shall be stopped immediately when **thunder is being heard**, the distance of the thunder storm now being 15 – 0 km. Persons on board are to go safe havens and stay there until the thunderstorm has passed away.

The thunderstorm is considered to be passed away when lightning no longer is seen and one hour has gone since the last thunder has been heard.

Areas to abandon and areas which are safe

Generally platforms inside the WTG towers and offshore substation are considered safe areas if persons stay at least 0,5m from walls and from vertical metal parts such as ladders, wires and cables.

Platforms with cabinets for installation and transformers etc. are considered safe if the cabinets are closed and transformers etc. are in normal condition – and not dismantled.

If a WTG cannot be abandoned in due time everybody on board is to stay in the bottom of the tower without touching it. At the offshore substation platform the location has to be decided + + + +. The Site Manager is to be contacted and his instructions to be followed.

