PROJECTLEIDER		**DATUM**	29 november 2019
TECHNICAL MANAGAER		**STATUS**	Definitief
CONTACT		**REFERENTIE**	ONL-TTB-05733
		PAGINA	1 van 5

Calamiteitenplan aanleg zeekabels

Net op zee Hollandse kust (zuid)

Revisiebeheer		
0.1 definitieve versie	Ingediend bij de waterbeheerder	29-11-2019

Voorwoord

Voor het TenneT project 'net op zee Hollandse Kust (zuid) (HKZ)' is een Watervergunning[1] verleend. Deze Watervergunning is onherroepelijk geworden op 14 april 2018. In het kader van de Watervergunning dient TenneT een aantal werkplannen ter goedkeuring aan de waterbeheerder voor te leggen.

Het hier voorliggende document **'Calamiteitenplan aanleg zeekabels'** betreft het calamiteitenplan dat is opgesteld voor de aanlegactiviteit van de vier 220 kV AC export en de 66 kV interlink (tussen de twee TenneT platforms, ook wel afgekort naar "HZA" en "HZB") zeekabels.

Een aantal besluiten benodigd voor het project wordt nog onder de Rijkscoördinatieregeling (RCR) voorbereid. Een van de benodigde besluiten betreft de goedkeuring door de waterbeheerder van het hier voorliggende 'Calamiteitenplan aanleg zeekabels'. Hiermee is het Ministerie van Economische Zaken coördinerend bevoegd gezag ten aanzien van de goedkeuring van dit werkplan.

Met dit werkplan worden tegelijkertijd twee aparte plannen, die eveneens de RCR procedure doorlopen, ingediend:

- **Het Werkplan Aanleg en Onderhoud zeekabels**
- **Het Scheepvaartplan aanleg zeekabels**

Tenslotte, in het kader van de aanlegwerkzaamheden voor het net op zee Hollandse Kust (zuid) en de hier betreffende Watervergunning is reeds een aantal werkplannen opgesteld betreffende het baggeren van de exit put en de aanleg van de HDD boringen onder de zeewering. Deze plannen met bijbehorende scheepvaart- en calamiteitenplannen zijn reeds goedgekeurd. Ook voor de aanleg van de platforms op zee wordt nog een werkplan met bijbehorend scheepvaartplan, calamiteitenplan, heiplan en verlichtingsplan opgesteld. Deze werkplannen worden in tijd op andere momenten ter goedkeuring aan de waterbeheerder voorgelegd.

[1] Watervergunning net op zee Hollandse Kust (zuid) (Ref. RWS-2018/6258, 19 februari 2018)

Inhoudsopgave

1. Calamiteitenplan

1.1 Project introductie en scope

Voor de introductie van het project net op zee Hollandse Kust (zuid) (HKZ) en de scope van de werkzaamheden waar dit Calamiteitenplan op is gebaseerd, wordt verwezen naar Deel 1 van het Werkplan Aanleg en Onderhoud Zeekabels (ref. ONL-TTB-05734). Het Werkplan Aanleg en Onderhoud Zeekabels wordt ingediend bij de waterbeheerder tezamen met dit Calamiteitenplan.

1.2 Inleiding Calamiteitenplan

Aan het TenneT project 'net op zee Hollandse Kust (zuid) (HKZ)' is een Watervergunning[2] verleend. Deze Watervergunning is onherroepelijk geworden op 14 april 2018 (hierna 'de Watervergunning'). In het kader van de Watervergunning dient TenneT een aantal werkplannen ter goedkeuring aan Rijkswaterstaat voor te leggen. Voorschrift 11 van de Watervergunning gaat in op het Calamiteitenplan.

Het hier voorliggende Calamiteitenplan aanleg zeekabels geeft een overzicht van planning van de werkzaamheden, interne contacten en projectverantwoordelijken, externe contacten en dienstverlenende instanties, alsmede instructies voor de handelswijze tijdens calamiteiten in de vorm van scenario's.

Het calamiteitenplan beschrijft welke direct follow-up er volgt in geval van een calamiteit. Risico's die gepaard gaan met de werkzaamheden worden beschouwd in de betreffende procedures en daarbij behorende Risk Assessments (zoals opgenomen in Appendix 14 bij het Werkplan Aanleg en Onderhoud Zeekabels). Het veiligheidsmanagementproces op dit werk wordt verder beschreven in projectdocumentatie zoals het HSSMP (health, safety, security management plan).

Leeswijzer:
Hieronder is voorschrift 11 van de watervergunning van net op zee HKZ weergegeven, gevolgd door een korte beschrijving met verwijzing naar appendix 1.

1.3 Watervergunning, voorschrift 11

Voorschrift 11 uit de Watervergunning luidt als het volgt:

Calamiteitenplan
1. De vergunninghouder overlegt voorafgaand aan de aanlegfase een geactualiseerd veiligheids- en calamiteitenplan.
2. Het veiligheids- en calamiteitenplan zoals bedoeld in lid 1 behoeft de goedkeuring van de waterbeheerder.

1.4 Beschrijving Emergency Response Plan

Voor het Calamiteitenplan wordt verwezen naar het Emergency Responseplan (ERP) van VO Cablel in de appendix bij dit document. Het ERP bevat de gehele scope van activiteiten die VO Cablel voor het project

[2] Watervergunning net op zee Hollandse Kust (zuid) (Ref. RWS-2018/6258, 19 februari 2018)

net op zee HKZ zal uitvoeren inclusief de in Werkplan Aanleg en Onderhoud Zeekabels beschreven werkzaamheden.

Dit plan in de Engelse taal opgesteld bevat de benodigde informatie voor de uitvoerenden ter voorbereiding voor een operationele noodsituatie. Het plan omvat de contactgegevens van de betrokkenen bij de uitvoerende aannemer VO Cablel en bij TenneT. Daarnaast omvat het plan de contactgegeven van de alarm- en hulpdiensten.

De ERP is in het Engels opgesteld vanwege de verschillende nationaliteiten die werken op dit project en verwarring dient te worden voorkomen. De officiële projecttaal op het project net op zee Hollandse Kust (zuid) is Engels. Een voorwaarde voor werken op het net op zee Hollandse Kust (zuid) project voor alle personeel is dan ook het hebben van een basis beheersing van de Engelse taal.

Appendix

- Emergency Response Plan van Van Oord Cablel, Ref. 144419-VOCAB-GEN-MGT-PLN-00027, revisie nummer 03, 22 november 2019

Hollandse Kust (zuid) Sea Cables

Emergency Response Plan – Werkplan Aanleg Zeekabels

Employer's doc-ID	HKZA-VOC-01697-001
Contractor's doc-ID	144419-VOCAB-GEN-MGT-PLN-00027
DCC Code	QB070

Item Designation RDS-PP	#HKZ					
Item Designation Breakdown	#HKZ					

Distribution Codes	SHE
As-built status	No
Books and bookstructure/Chapter	B2
Purpose of Submission	For review
Purpose of Issue	Issued for Installation / Construction
Final Status, ready for Handover	No

Date	Employers Rev.	Made by:	Checked:	Approved:	
19-12-2019	04	Joan Danner	Konstantinos Soulas	Saskia Rijtema	Chrysovalantis Koutsikos

Revision record

Revision Number	Description	Date
00	First issue	19-07-2019
01	Updated Revision	23-08-2019
02	Updated Revision	14-10-2019
03	Updated Revision after 95% review meeting with TenneT and Permit Authorities	22-11-2019
04	Updated revision after comments Coastguard	19-12-2019

External referenced documents

Ref Nr.	TenneT Doc.-ID	Originator doc.- ID	Document Name	Version	Date
[1]	ONL-TTB-03261 E1		SHE requirements	09	08-02-2018
[2]	ONL-TTB-03261 E1		Statement of intent	02	30-06-2017
[3]	ONL-TTB-03261 E1 Annex 2		Life Saving Rules	00	30-06-2017
[4]	ONL-TTB-03261 E1 Annex 3		Safety Vision 2018	02	30-06-2017
[5]	ONL-TTB-03261 E1 Annex 4		Guideline definitions and classification of SHE incidents	03	30-06-2017
[6]	ONL-TTB-03261 E1 Annex 5		General SHE requirements contractors	03	30-06-2017
[7]	ONL-TTB-03261 E1 Annex 6		Guideline reporting investigation review SHE incidents	03	30-06-2017
[8]	ONL-TTB-03261 E1 Annex 7		Approved methods SHE incident investigations	03	30-06-2017
[9]	ONL-TTB-03261 E1 Annex 8		SHE training matrix	03	30-06-2017
[10]	ONL-TTB-03261 E1 Annex 9		Key Performance Indicators	02	05-04-2018
[11]	ONL-TTB-03261 E1 Annex 10		Health and Safety file WOZ (HKZ)	04	21-12-2017

Supporting documents

Ref Nr.	TenneT Doc. ID	Originator doc.- ID	Document Name
[12]		VOMS-PR1.02-OD-01	Van Oord Management System
[13]		VCM-TE-000	Overview document management system
[14]		144419-VOCAB-GEN-MGT-PLN-00001	Project Execution Plan
[15]		VOMS-PR1.06-IN-01	Instruction - Corporate

			Emergency Plan
[16]		VOMS-PR1.06-IN-03	Instruction - Medical evacuation and repatriation
[17]		144419-VOCAB-EXP-ENG-MST-00015	Werkplan Aanleg Zeekabels
[18]		144419-VOCAB-EXP-ENG-MST-00017	Werkplan Scheepvaart
[19]		VOMS-PR1-02-IN-02-038	Checklist Man Overboard
[20]		VOMS-PR1-02-IN-02-033	Checklist Heavy weather
[21]		VOMS-PR1-02-IN-02-036	Checklist Grounding or Stranding
[22]		VOMS-PR1-02-IN-02-043	Checklist Abandoning ship
[23]		QHSE-HSE-PU-SWP-024	Setting up a site office
[24]		QHSE-HSE-PU-SWP-044	UXO
[25]		QHSE-HSE-PU-SWP-038	Storage of dangerous goods
[26]		VOMS-PR1.02-IN-02	Standing Instructions for self-propelled vessels > 500 GT
[27]		144419-VOCAB-GEN-MGT-PLN-00002	Health, Safety and Security Management Plan
[28]		VOMS-PR3-02-OD-06	JOB TRAINING OVERVIEW OPD EN
[29]		VOMS-PR3-03-OD-01	Training Matrix Self propelled vessels above 500 GRT

Distribution list

Project team
Employer
Engineer
Subcontractors and suppliers, if applicable

Table of contents

Abbreviations and definitions

Abbreviations

AED	Automatic External Defibrillator
DP	Dynamic Positioning
ERP	Emergency Response Plan
ERT	Emergency Response Team
HSE	Health, Safety and Environment
KNRM	Royal Netherlands Rescue Institution
MSDS	Material Safety Data Sheet
MTC	Medical Treatment Case
NLCG	Netherlands Coast Guard
JV	Joint Venture
OHVS	Offshore High Voltage Substation
PPE	Personal Protective Equipment
QHSE	Quality, Health, Safety and Environment
RWC	Restricted Work Case
SOPEP	Ship Oil Pollution Emergency Plan
STCW'95	Standards of Training, Certification and Watchkeeping '95
UXO	Unexploded Ordnance
VHF	Very High Frequency
VO	Van Oord
VOMS	Van Oord Management System
VTS	Vessel Traffic Service

Definitions

Contractor	VO Cablel
Emergency	An undesired event with negative consequences demanding immediate action of the local, area or corporate management. To be classified as an emergency, an event should meet at least one of the following criteria: • Immediately threatening to life, health, property or environment. • Has already caused loss of life, health detriments, property damage or environmental damage. • Has a high probability of escalating to cause immediate danger to life, health, property or environment
Emergency services	Police, Fire Brigade, Ambulance, Coast Guard, etc.
Employer	TenneT TSO B.V.
Engineer	Employer's representative acting as the Engineer
First Aider	Certified/trained person who gives simple medical treatment as soon as possible to a person who is injured or who suddenly becomes ill (trained as per local regulations)
Incident	An undesired event with possible damage and/or injuries as a result. Within VO, incidents are divided in the following types: • Accident • Near Miss • Damage (subdivided into Technical or Environmental)"
Minor and major injuries	• Minor: injuries which the injured person recovers from directly or in 15 days or less (including First Aid, MTC and RWC). • Major: injuries which the injured person recovers from in over 15 days.
Minor and major environmental impact	• Minor: spills up to 200 liter (including Tier 1) • Major: spills over 200 liter (including Tier 2 and 3)
Project	Hollandse Kust (zuid) Sea Cables

Van Oord repatriation assistance team	Coordinates the communication between the family of the injured person and the medical facility which has been requested to provide a 2nd opinion.
Marine Operations Centre	Coordinates marine operations within the project, operated by the employer.

1 Introduction

1.1 Project description

In July 2015, the wind energy at sea ("Windenergie op Zee") law was approved, which allows wind energy in the Dutch North Sea to scale-up to 3.450 MW as part of the overall goal of achieving 16% renewable energy by 2023. The roll-out strategy of the Ministry of Economic Affairs in September 2014 stated that Hollandse Kust (zuid) will be the second area to be developed.

TenneT is responsible for the realization and operation of the offshore and onshore wind area connections to its onshore high voltage grid.

Two offshore high voltage AC substations (Alpha and Beta) and Cable Systems to the onshore high voltage grid are foreseen on the Hollandse Kust (zuid) wind farm area. Each Cable System will consist of two circuits each consisting of one three core 220 kV AC Sea Cable which may also be used for the onshore part on the Land Station.

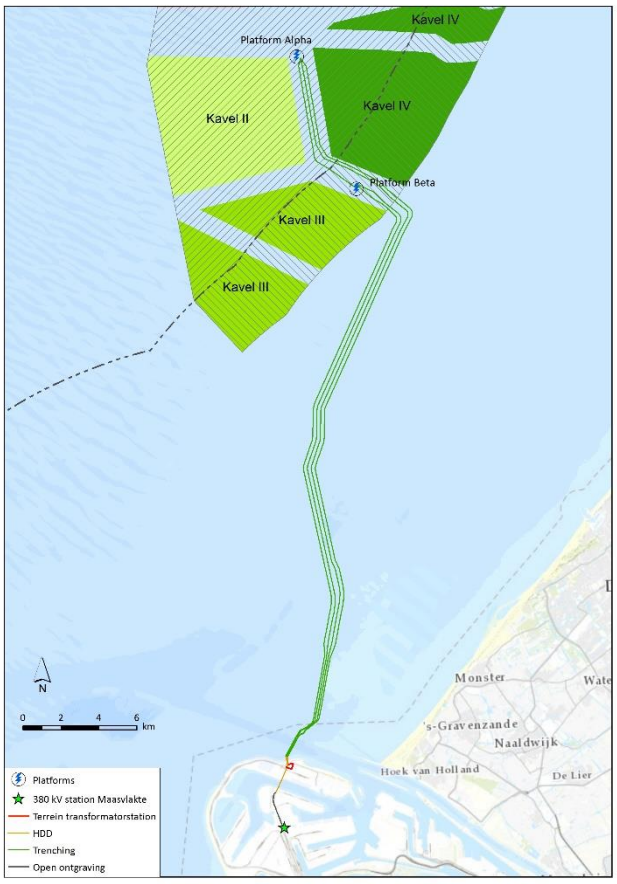


Figure 1: Route from the Hollandse Kust (zuid) designated wind area to the Land Station.

The location of the two Platforms (Alpha and Beta), the Land Station and the foreseen cable route are shown in Figure 1. The cable route for the two 220 kV Sea Cables run from each Platform to the Land Station on the Maasvlakte. The Hollandse Kust (zuid) Alpha Platform is located outside of the Dutch 12 mile nautical zone. The Hollandse Kust (zuid) Beta Platform is located inside of the Dutch 12 mile nautical zone. The 220 kV Sea Cables run from the Platform locations to shore through areas with mobile sand waves, former sand extraction and active sand dumping areas and cross the Maasmond navigational channel. The 220 kV Sea Cable routes cross the Maasmond at a location where all ships to and from the Port of Rotterdam have to pass. The Maasmond is crossed by trenching from the Northern side to just south of the Maasmond navigational channel. From there HDDs (500m estimated length each) are used to cross the sea defence that ends on the Land Station.

1.2 Scope of Work

The scope of Works of the Contractor consists of design, engineering, manufacturing, offshore, near shore, landfall and onshore installation of the 220 kV Sea Cables and includes the pull-in at the Hollandse Kust (zuid) Alpha Platform up to and including termination, offshore and / or transition joints and the pull-in at the Land Station up to and including the termination.

1.3 Scope of document

This Emergency Response Plan has been developed for the project with the purpose to:

- Describing organisation, responsibilities, authorities and procedures including the maintenance of internal and external communications within the discipline itself;
- Identifying the systems and procedures for providing personnel refuge, evacuation, rescue, medical treatment and repatriation;

- Describing the arrangements for training (emergency) response teams and for testing emergency systems and procedures.

This Emergency Response Plan will be applicable to the activities that are performed by Contractor within the Project. Actions and communications with regards to emergencies will be taken care of by Contractor in close coordination with the Employer. The ERP shall be applied to the emergency response management systems within Project locations, facilities and during associated work activities in / on:

TenneT Landsite
Pull-in, termination and land cable installation.

Applicable equipment:
- Land equipment (excavators, crane, winches)

Offshore OHVS / Jacket
Pull-in of the cable onto the jacket. Installing and routing of the cable on the OHVS.

Applicable equipment:
- Pull-in winch

Marine equipment
The marine equipment is used for a variety of tasks. Cable laying, trenching of the cable, (pre)dredging and various support.

Applicable equipment:
- Cable Laying Vessel Nexus
- Jack-up barge
- Trenchers
- Support vessel(s)
- Guard Vessels
- Dredging vessels

Please note that this document describes the direct follow-up at the occurrence of an emergency. Work methods, risks and related mitigations to prevent incidents are described in the Method Statements and Procedures of the respective work scope. The Werkplan Aanleg Zeekabels contains a Risk Assessment on Method Statement level (high level), the underlying procedures contain Risk Assessments on procedural level.

1.4 Emergency Response Management Structure

As this project will be undertaken by the joint venture (JV) of Van Oord and Hellenic Cables, both with their own respective management systems, a logical breakdown has been made following the work packages and activities of the joint venture partners. The exact breakdown is described in the Health, Safety and Security Management Plan. The Cable production phase will be governed by the Hellenic Cables Management System and the cable installation phase will be governed by the Van Oord Management System.

This Emergency Response Plan is written for the Cable Installation work scope and will therefore be limited to the arrangements as per the Van Oord Management System.

2 Transport and Installation

The transport and installation of the cables for the work scope of this project will be performed under the Van Oord Management system. The arrangements as put in place for the Emergency Response during this specific phase are described from chapter 3 on.

2.1 Emergency Response Organisation

Emergency response is the (immediate) action which will be done in case of an emergency to prevent or at least mitigate negative effects on people's health, facilities, equipment and environment. The emergency response organisation is based on the project organisation with clearly defined hierarchy and responsibilities. In this chapter the specific responsibilities/roles/tasks of the project team member in case of an emergency will be described.

A dedicated emergency telephone number will be in place as soon as the project starts on site. The emergency telephone will circulate between the various ERT members to ensure coverage 24/7. The applicable ERT member will determine if the emergency is to be considered a minor or a major emergency.

2.2 Project Emergency Response Team (ERT)

The Project Emergency Response Team consists of the following key people:

- Project and/or Operations Manager
- Works Manager
- Superintendent
- HSE Representative
- Master, where applicable
- Medic , where applicable

The Works Manager will be responsible for leading and organizing the Emergency Response Team.

The Superintendent will be the person to contact the Emergency Services and the Master will be authorized to act in accordance with the marine equipment's, overall company policy, Standing Instructions and (inter)national nautical/maritime law and regulations.

The Emergency Response Team is responsible for:

- Assisting with any emergency situation that may arise and provide support for the entire emergency period;
- Familiarising with communications structure and contacts;
- Familiarising with support and services to be provided;
- Familiarising with the preparedness for any emergency situation.

2.3 Specific Responsibilities

In addition to the responsibilities as stated in the Project Organisation Plan, below the Emergency Response specific responsibilities.

Project / Operations Manager	
Responsibilities:	• Authorising appropriate and adequate financial resources, materials and services to overcome the emergency situation(s); • Informs the Van Oord Corporate Emergency Response Team if applicable; • Informs Employer in case of an emergency; • To decide whether an injured person will be transported back to his / her home country (reference is made to VOMS-PR1.06-IN-03 Instruction – medical evacuation and repatriation); • Will inform neighbours (if applicable) in case of an emergency.

Works Manager	
Responsibilities:	• Overseeing all emergency responses on behalf of Van Oord; • Liaising with Superintendents (onshore and near-shore) and Project Manager; • Ensuring that Van Oord Superintendents and Vessel Master / Barge Master are aware of response actions as described in the Emergency Response Plan (ERP) • Ensuring all personnel on onshore locations are adequately trained as per the drill schedule in chapter 4.2; • Necessary resources required by this ERP are made available; • Ensuring Van Oord site personnel and vessel crew are aware of and following the guidelines as stated in this Emergency Response Plan. • Updating of Emergency Response Plan (ERP) and keeping all project personnel aware of the emergency procedure and procedural changes.

Superintendent	
Responsibilities:	The Superintendent is responsible for the following: • Calling the Emergency Services in case of an emergency; • Assisting the Works Manager in emergency situation; • Supporting Foreman/Operators and liaising with Works Manager; • Supporting Foreman/Operators and liaising with onshore support organisation.

HSE Representative	
Responsibilities:	• Assisting Superintendents (onshore and offshore) in emergency situation; • Supporting Vessel Master in emergency situation if required; • Assuring personnel on site are aware of practical implementation of emergency response requirements; • Assuring toolbox meetings regularly address emergency response subjects; • Monitor project training activities (i.e. emergency drills).

Captain - (Barge) Master	
Responsibilities:	• Overall command of the vessel and crew during any emergency situation; • Assessing the emergency situation and initiating vessel emergency procedures in accordance with specific vessel emergency preparedness manuals; • Liaise with Works Manager during emergency situations; • Informing relevant authorities of emergency (i.e. Port/Harbour Master, Coast Guard, etc.); • Ensuring all personnel on board is aware of emergency response requirements and is adequately trained as per the drill schedule in chapter 4.2

2.3.1 All other persons working on site

All other persons working on site must take care to ensure that his/her own health, safety and welfare and that of other persons, is not affected by anything he or she does, or fails to do.

If the person does not have a dedicated role in the emergency response they will follow the instructions of the person in charge of the specific working location and will provide assistance in the emergency response, where needed, within their capacities and without endangering their own safety.

2.3.2 First Aiders

The qualified First Aiders will provide first aid treatment to the injured person at the incident location and will stabilize the injured person. Onboard vessels, medical care is provided as per STCW.

2.3.3 Firefighting team members

The qualified firefighting team members (onshore) will ensure that a fire will be extinguished at first discovery, without jeopardizing their own safety.

On board the Marine equipment, the firefighting team members will be in the possession of a STCW'95 accredited fire training.

2.3.4 Third Party Personnel

All third party personnel onshore must take care to ensure that his/her own health, safety and welfare and that of other persons, is not affected by anything he or she does, or fails to do. They will follow the requirements of this Emergency Response Plan as well as the instructions given to them by Van Oord representatives.

2.3.5 Visitors

In case of an emergency, the visitor has to stay with his guide. The guide will make sure that the visitor is taken to the applicable muster station on site.

3 Emergencies

3.1 Categories of emergencies

The first stage in any emergency preparedness process is to identify and categorise the types of emergency which could realistically occur during operations. There are three categories of emergencies:

- LOW: The effects are confined to a relatively small area close to the source of the event and there are hardly any effects to the surroundings.
- MEDIUM: The effects are having a wider impact on life, health, property and/or environment
- HIGH: The effects of the incident do not only have a direct impact to the surroundings that require an operational response, but also may have a much wider impact. This relates to the company's reputation, legal issues, financial consequences and/or political/societal implications

3.2 Type of emergencies

Below an overview of the type of emergency situations that could potentially occur on the project is provided.

Type of emergencies:

- Serious personnel injuries (Section 3.3)
- Fire and/or explosion (Section 3.4 and Appendix 1)
  - For vessels this is integrated into the ships management system.
- Spills and/or pollution (Section 3.5)
  - For vessels this is integrated into the ships management system.
- Unexpected UXO (Section 3.6)
- Man overboard (VOMS-PR1-02-IN-02-038 Checklist Man Overboard)
- Severe weather (VOMS-PR1-02-IN-02-033 Checklist Heavy weather)
- Collision, grounding or stranding of marine equipment (VOMS-PR1-02-IN-02-036 Checklist Grounding or Stranding)
- Emergency evacuation of marine equipment (VOMS-PR1-02-IN-02-043 Checklist Abandoning ship).
- Vessel blackout (Integrated into the ships management system)
- Trencher blackout (Section 3.7)
- Trencher hydraulic leak (Section 3.8)

Maasgeul specific:

- Collision with passing ships (Section 3.9)
- Instruction to stop work (Section 3.10)
- Vessel failure during work (Section 3.11)

In addition to the onsite response, for certain types of emergencies the Corporate Emergency assistance procedure has to be followed. For this please refer to VOMS-PR1.06 Emergency Assistance.

The management system of contracted vessels will be checked to ensure similar suitable procedures to the VO standing instructions are in place.

3.3 Serious personnel injuries

3.3.1 First Aid cases

Each working location will have a trained First Aider and first aid facilities. For sites under 50 persons, a minimum of one qualified First Aider will be on site during site working hours. If over 50 persons are on site at any time, 2 First Aiders will be in attendance. Arrangements will be in place to cover leave,

sickness, shift-work, weekend work etc. Personnel on site will be informed of the first aid arrangements during induction training. As per TenneT Employer requirements, on any site that has over 100 persons a medic has to be present.

A map and directions to the local hospital will be compiled and displayed on the site notice board (Appendix 3), along with the completed Telephone list (Appendix 4). These document will also be placed in the project cars.

First aid boxes will be provided and maintained and will be checked on a monthly basis.
Should there be an accident the (qualified) First Aiders will provide first aid treatment to the injured person at the incident location and will refer the injured person in case of doubt.

3.3.2 Major injuries

During the treatment and stabilisation of the injured person the first aider will assess the seriousness of the situation and when required will request for additional support as per the emergency flowcharts that are provided in the appendices (Appendix 5 Onshore and Appendix 6 Offshore). All locations will have a defibrillator (AED) present as per TenneT Employer Requirements, medical personnel will be trained in its use.

Offshore on a Van Oord vessel or a subcontracted vessel
Should the incident occur offshore the following scenarios will be used to transport the person ashore:

- A vessel (either Coast guard or a project support vessel) will be warned to pick up the injured person.
- A stretcher is available to transfer injured persons vessel to vessel.
- The vessel will bring the injured person to either the nearest or preferred harbour.
- Pick-up point for ambulance services at the port is located at the personnel transfer jetty.
- In case it is decided that we will not use ambulance services, the route to the nearest hospital can be found in Appendix 3.

Offshore on a TenneT OHVS
At the above location the Emergency Response arrangements of the respective OHVS will be used for medical evacuation. Prior to work start the Emergency Response Arrangements as in place will be reviewed. If they are not up to the required standard, additional measures will be put in place.
Note that the Coast Guard will only perform a medical evacuation by helicopter or rescue vessel when requested to do so by the Radio Medical Services (Radio Medische Dienst). The personnel of the Coast Guard will not enter the OHVS but will require the injured person to be brought to the helicopter hoist position or vessel.

A Van Oord vessel or a subcontracted vessel at quayside or yard
In case an incident occurs onshore the ambulance services will be notified and will pick-up the injured person at the location of the accident. The Emergency Response Arrangements of the respective port will be used.

Onshore worksite (Maasvlakte 2 worksite)
In case an incident occurs onshore the ambulance services will be notified and will pick-up the injured person at the location of the accident.

3.3.3 Medical evacuation

In case of a medical evacuation to the home country of an injured person or in case of repatriation, the process as described in VOMS-PR1.06-IN-03 Instruction – medical evacuation and repatriation will be followed.

3.4 Fire and / or explosion

3.4.1 Firefighting equipment

Fire extinguishers of the suitable type, will be located at the site offices, and within easy reach of where any hot works will be taking place.

Firefighting equipment will have a valid, in date, inspection label and additional visual inspections will be performed to ensure they are in a good condition. Should there be any, visual, signs of defects the equipment will be replaced and serviced by a 3rd party.

Reference is made to QHSE-HSE-PU-SWP-024 - Setting up a site office

3.5 Spills and/or pollution

Personnel on site will be informed of the environmental and waste arrangements during induction training. Personnel working on the marine equipment will be informed of the environmental and waste arrangement during the vessel familiarisation / induction.

The storage of hazardous materials such as diesel, hydraulic oil, paint and other chemicals that pose potential environmental hazards are stored in a manner that prevents any potential risk for spillage (e.g. drip trays). The amount of hazardous materials on site will be kept to the absolute minimum.

Storage tanks will be held on a secure site. Filling and fuelling valves / taps will be kept locked with access only to authorised personnel.

For onsite refuelling, oil spill response and firefighting equipment will be stationed near the mobile bowser. Only generators and mobile plant that are too far away to drive up to the fuel storage will be refuelled on site.

A register of potential hazardous materials will be kept. The register will include the applicable MSDS sheets. Reference is made to the Environmental Management Plan for more detailed information about spills and / or pollution, QHSE-HSE-PU-SWP-038 Storage of dangerous goods.
For marine equipment, reference is made to the SOPEP Plan if applicable.

3.5.1 Fire prevention and precautions

3.5.2 Fire prevention

A number of skips will be placed on site for the segregation of waste, i.e. wood, hazardous materials, metal, paper, general waste etc. Skips will be emptied on a regular basis, hence limiting the amount of combustible material on site at any one time. Lighting of fires will not be permitted on site. All flammable substances will be kept in an adequately ventilated storage.

Prior to storage checks will be made to ensure that all substances are compatible and can be stored together without causing a fire or explosion risk. The site will employ a system wherein permits will be needed before any hot works can take place (welding, burning etc.) Smoking will only be allowed in designated areas

3.5.3 Fire precautions

Fire extinguishers (CO2 and Water) will be located at the site offices, canteen and within easy reach of where any hot works will be taking place. Arrangements will be made for the regular inspection of fire prevention equipment, and smoke alarms will be placed in all temporary offices. All escape routes will be clearly defined and kept clear of obstructions at all times. A fire drill will be executed every 6 months or at least once during the project duration (if project is < 6 months). Safe Work practices are in place which include guidance and instruction on the prevention of fires and the required precautions.

3.6 Unexpected UXO

Before starting dredging operations at the project, the Project Manager must inform the Master about any obstacles or explosives in the dredging area. An UXO ALARP certificate will be issued prior to work start. If despite all preventive measures, explosives are found on board, the following actions must be taken:

- Clear the area concerned and do not re-enter
- Inform Master
- Inform Engine Room
- Inform Project Manager and follow the Emergency Response Plan flow (Appendix 6)
- Inform the appropriate authorities

Any found explosives/UXO will have to be reported to the Coast Guard Centre, contact details can be found in Appendix 4 'Telephone list'. The Coast Guard Centre will prioritize the report and send it to the department of Defense whom will take care of the removal of the explosive/UXO. Also refer to the 'Explosievenkaart' which can be downloaded here: https://www.kustwacht.nl/nl/explosieven.html

Refer to the Safe Work Practice: QHSE-HSE-PU-SWP-044 UXO.

For the 'Dredging HDD exit pit' work scope, additional prevention and mitigation measures are taken in line with '144419-VOCAB-EXP-ENG-MS-00009 Werkplan HDD Ontvangstput'.

3.7 Trencher blackout

In case the Trencher is subsea and experiences a blackout it will need to be retrieved. In order to do so it will need to release the cable. For this purpose an ROV will go down with an hydraulic line. This will be plugged in directly to the hydraulic system of the trencher which will allow it to release the cable. After this, the trencher will be connected to the lifting wire and lifted back onto the deck.

3.8 Trencher hydraulic leak

If a severe hydraulic leak were to occur on the trencher, the operations need to be stopped and the trencher put back on deck as soon as practicably possible. It must be noted that the hydraulic oil present in the trencher is biodegradeable and will therefore not cause severe damage.

The Port of Rotterdam Harbour Coordination Center will be informed as soon as possible to discuss required follow-up.

3.9 Maasgeul specific: Collision with passing ships

The Maasgeul is a busy shipping lane. In the event that the Van Oord work vessel collides with a passing ship then vessel standing instructions will be followed.

Preventive measures
All nearby vessels are warned of the work by the Port Authorities prior to work execution. If required by the authorities then a pilot will be onboard during works in the Maasgeul for direct and clear communication with the Port authorities and passing ships traffic. The vessel will have a minimum of 2 VHF radio systems with at least channels 11, 10 and local channels of Vessel Traffic Services Rotterdam. The vessel will also have an approved AIS-transponder.

3.10 Maasgeul specific: Instruction to stop work (due to emergency situation)

If an instruction is received from the port authorities to stop work (due to an emergency situation), the current activities will be discussed with the Port Authority / VTS and actions will be defined to mitigate the emergency situation.

3.11 Maasgeul specific: Vessel failure during work

If a vessel experiences failure occurs during work, three (3) scenarios can occur.

The first scenario is that one of the engines stops working of a dredging, guard or similar type of vessel. In this case the ship will be manoeuvred with one engine and sailed to a safe area. Either the crew can fix the mechanical issue or if a longer period is necessary to fix the issue assistance from shore will be requested and the vessel will anchor at an agreed anchorage.

In second scenario when both engines fail of a dredging, guard or similar type of vessel, the anchor will be dropped and assistance of a tugboat will be requested.

In the third scenario the DP systems on either the Cable Lay Vessel Nexus or the Support Vessel for the Trencher experience issues. It must be noted that there is redundancy available in the systems (DP2). If complete failure were to take place, then the anchor will be dropped and if required the subsea equipment will be retrieved.

In all cases the VTS Hoek van Holland, Port of Rotterdam Harbour Coordination Center and Coast Guard will be informed as soon as possible.

4 Monitoring and Review

This Emergency Response Plan (ERP) will be updated when:

- Changes in the work activities
- Changes to marine equipment (new equipment arriving or leaving)
- After incidents / accidents or outcomes of drills

It is the Works Manager's responsibility to take the necessary steps to update the ERP according to new situations and provide updated versions.

4.1 Training

Toolbox talks will cover emergency scenario's (oil spills, mustering, emergency response, etc.). The toolbox talks are an essential part of the overall safety programme to ensure all persons fully understand their roles in case of an emergency.

4.2 Drills

Emergency drills will be conducted to ensure readiness for emergencies. Drills simulate actual emergencies where practicable, and confirm response and action times. Such drills are an essential part of the overall safety programme to ensure everyone fully understands their role in case of an emergency. Drills may be conducted in cooperation with the Emergency Services (Ambulance, Police, and Fire Brigade). Exercises with the KNRM can be requested through their headoffice at 'info@knrm.nl'.

Onshore drills such as serious personnel injury or fire should be conducted shortly after mobilisation of the site, and prior to each (new) work phase.

On board the marine equipment the following drill schedule will be followed (initiated by the safety Officer on board):

Type of drill	Frequency
Abandon ship drill	1 x month
Man Overboard drill	1 x month 1 x 3 months afloat
Fire drill	1 x month
SOPEP (oil spill) drill	1 x month
Emergency situation drill	1 x 2 months (one scenario)
Lifeboat drill	1 x 3 months
Emergency Steering drill (where applicable)	1 x 3 months
Manoeuvring drill (where applicable)	1 x 3 months

For the onshore section the following drill schedule will be followed:

Type of drill	Frequency
Fire drill (including muster drill)	Prior to start of operations 1 x 6 months
Oil spill drill	1 x 2 month
Testing of Emergency Response Plan (table top drill)	Prior to start of operations 1 x 6 months

After each drill / exercise an evaluation report will be prepared by the Master and/or HSE representative which should include an overview of the findings of the drill including strengths, weaknesses and recommendations (if any) for future improvements, reference is made to Appendix 7

Template Exercise Report. Note that as per the Tennet employer requirements a drill has to be performed prior to the start of works at each vessel.

5 Communication

This section provides a description of the communication systems available and how they interface. It also provides guidance on how to respond to different alarm systems and actions that key personnel take when emergency communications have been activated.

5.1 Communication facilities

On site mobile phones and hand-held radios are used. In addition to mobile phones, the main and auxiliary marine equipment use VHF for communication purposes.

On the marine equipment VHF radios will be used for communication and a designated channel is in place for emergencies, reference is made to Appendix 4.

5.2 Coordination

Contractor will establish one clear line of communication. The possibility exists that various people will start phoning each other, which could mean that not everyone has the correct information any longer and confusion is created.

For the initial notification there is an Project Emergency Number which will be on standby 24/7.
The person carrying the emergency phone will notify the responsible person in charge.

Other relevant contact detail for the emergency response team is provided in the telephone list in the appendix to this document.

It should be noted that the telephone list is a living document and will be updated on a standalone basis.

No information will be released to the press or news media prior the Project Manager approval

5.3 Reporting and documentation requirements

Reporting will be the responsibility of the Works Manager. Reporting will be carried out as soon as the situation has been stabilised. Works manager will ensure correctness and completeness of details and will forward the report to QHSE Department at Rotterdam.

5.3.1 Incident reporting to Employer and Enforcing Authority

Incidents shall be reported immediately to the Project Manager, this includes any involved sub-contractors working on site. When required incidents shall also be reported to the ISZW or SodM. This will be done in line with Van Oord internal procedures.

Incident reporting to the Employer and more information can be found in the Health, Safety and Security Management Plan and the Standing Instructions for self-propelled vessels >500 GT.

For applicable emergencies, the TenneT Emergency Notification Flow can be initiated. This is to ensure the employer is aware of the emergency and has the possibility to provide support and inform applicable authorities. Please refer to Appendix 8.

5.4 Communication (to Coast Guard and harbour authorities)

A part of the work will fall within the authority of the Harbour Master Rotterdam, the Coast Guard is only responsible for SAR (Search and Rescue). The Harbour Master Rotterdam will oversee the work (preparation) to ensure ship traffic will be able to pass the worksite in a safe and efficient way.

Prior to the start of the work an application form regarding ‘North Sea Activity (NSA)’ has to be filed to the Coast Guard. The use of this form ensures that the operator at the Coast Guard Centre is aware of the work scope. It allows them to decide whether or not a ‘navigation message’ has to be sent out to

ship traffic. Also it will provide them with an overview of all active vessels including their emergency contact details. The form can be found here: https://www.kustwacht.nl/en/node/275.

6 Emergency Response Equipment

The Master of the vessel / barge and the operator of the dry plant are responsible to ensure that the emergency response equipment is regularly checked and inspected.

The firefighting system and emergency equipment provided on each piece of equipment varies depending on the equipment. Vessels are equipped with Emergency Response Equipment as per international maritime standards. An indicative list is given below, exact details can be found in the vessel specific Emergency Response Equipment schematics which are held on board. On land sites an overview of available equipment is held by the local supervisors.

Hopper dredger / multi-purpose barge

- Firefighting system;
- Fire detecting systems;
- Portable fire extinguishers;
- First aid boxes;
- Life rafts;
- Lifebuoys;
- Life vests / jackets;
- Distress rockets / flares
- Oil spill equipment as per SOPEP manual
- AED

Support vessels

- Portable fire extinguishers;
- First Aid box;
- Life rafts;
- Lifebuoys;
- Life vests / jackets;
- Distress rockets / flares
- AED

Dry plant

- Fire extinguishers;
- First Aid box;
- Oil spill equipment (i.e. sheets, plastic bag for contaminated soil)
- AED

Appendix 1: Fire / First Aid action poster (onshore use)

FIRE ACTION		FIRST AID ACTION	
1.	SOUND THE ALARM 	1.	- DO NOT ENDANGER YOURSELF - DO NOT MOVE THE INJURED PERSON
2.	IF POSSIBLE TACKLE THE FIRE USING THE APPLIANCES PROVIDED  *DO NOT ENDANGER YOURSELF OR OTHERS IN DOING SO*	2.	- SITE PERSONNEL LISTED BELOW ARE QUALIFIED BHV'ERS AND SHOULD BE CONTACTED IMMEDIATELY
IF YOU HEAR THE FIRE ALARM		**IF FURTHER ACTION IS REQUIRED** DIAL 1-1-2 FOR AMBULANCE	
3.	LEAVE THE BUILDING BY THE NEAREST AVAILABLE EXIT 		
4.	CLOSE ALL DOORS BEHIND YOU		
5.	GO TO MUSTER/ASSEMBLY STATION AND REPORT TO PERSON IN CHARGE 	Report to first aid or fire services: • Your name • Location on site • Type of incident • How many victims To report to ambulance emergency operator: • Name of caller and company • Location • Type of incident (fire, car accident, drowning elec. shock etc.) • How many victims	
EMERGENCY PERSONNEL			
.....		.....	

Appendix 2: Oil spill flowchart

The objective of this flowchart is to take the proper actions to stop and control an oil spill on a vessel as quickly and efficiently as possible.

Procedure

In case of an oil spill, the following steps have to be taken:

- Warn the bridge immediately. Do not waste any time, take immediate action to stop the discharge of oil.
- Mate on duty warns the master and chief engineer.
- Mobilisation of oil pollution prevention team by the master.
- Oil spill team will use all oil absorbent means and other equipment to control the oil spill.
- Engineer on duty makes sure that the system that causes the oil spill is isolated as quickly as possible and informs the mate on duty.
- If necessary, the master will inform the authorities (port authorities, coast guard, dock master or superintendent) as per the Standing Instructions for self-propelled vessels > 500 GT.

As soon as the oil spill has been stopped and under control, the decks are cleaned and used oil absorbent means are put in appropriate closable bags or drums. Refill the containers with oil absorbing materials as soon as possible.

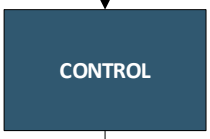
Responsibilities

Master

- Responsible for updating the SOPEP manual.
- Sees to it that crew on board is informed about the SOPEP manual
- Responsible for SOPEP drills on regular basis.
- Responsible for containers with sufficient oil absorbing materials are stored on different locations on the vessel.
- Supervises the oil spill operation.
- Warns the authorities.
- The master will deal with the necessary SOPEP paperwork and any formalities with the authorities.
- Responsible for preparing an environmental incident report as per VOMS-PR1.07 Incidents.

Chief Engineer

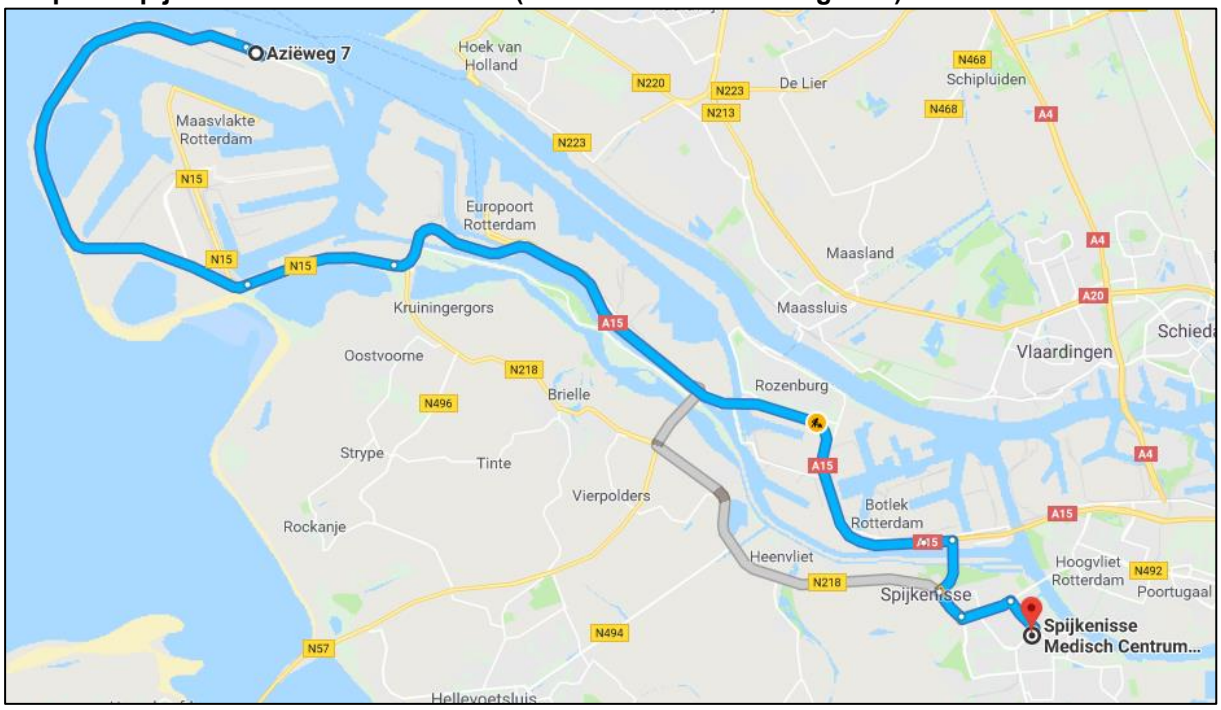
- Gives master technical advice.
- Sees to it that the engineers on board are informed about the relevant systems listed in the SOPEP manual that may cause leakage and the measures that are to be taken to stop the oil spill.

	Activity	Responsible
1		**1. Site personnel** Decide whether the spill is within or outside of their immediate control. If outside of immediate control, notify Project Manager who then notifies relevant authorities. If spill is within immediate control, proceed with clean up and notify Project Manager if not already aware.
2		**2. Site personnel** Ensure safety first, e.g. correct PPE (check MSDS), fire risk, machinery. If safe to do so without risk, close lines and shut down equipment
3		**3. Site personnel** Contain the flow and prevent it reaching a watercourse or entering drainage system
4		**4. Site personnel** Control the spillage at the source
5		**5. Site personnel** Cover spill with absorbent material or sand and clean up. In the event of a spill out of control, assist in clean up process as directed by emergency services / Project Manager. Replenish spill kits after use.
6		**6. Site personnel** Dispose of cleaning materials as hazardous waste
7		**7. Site personnel / Project Manager** Ensure an incident report, for all spills is completed

Appendix 3: Route to local hospital

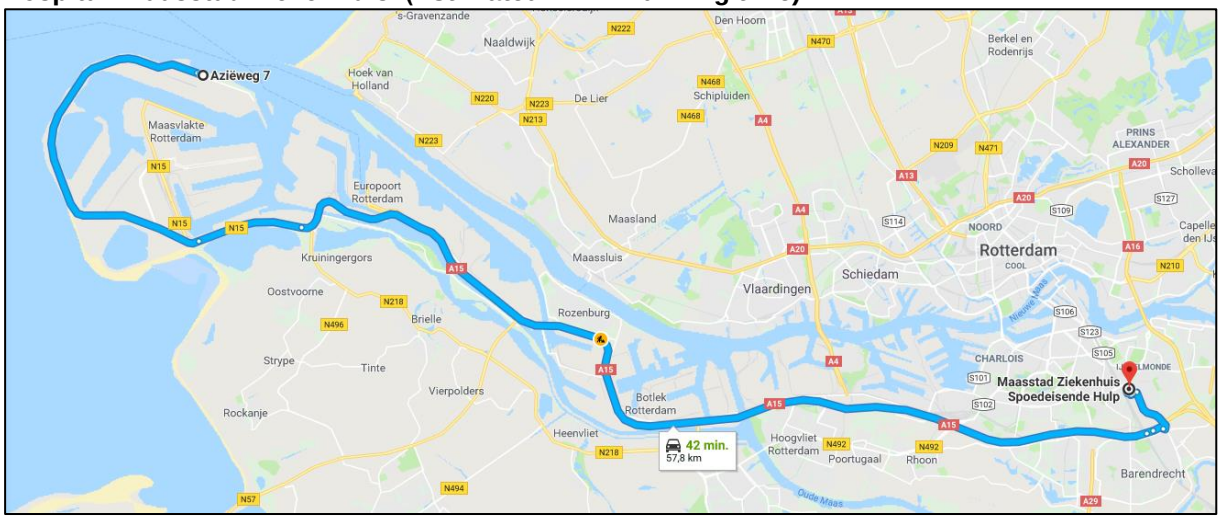
The route to the closest local hospitals able to deliver emergency care. To be verified prior to mobilisation.

Hospital 'Spijkenisse Medisch Centrum' (Estimated 36min driving time)



Adress Ruwaard van Puttenweg 500, 3201 GZ Spijkenisse, **Phone:** 0181 – 65 88 88
Website https://www.spijkenissemc.nl/
Open 7am to 9pm, 7 days a week.

Hospital 'Maasstad Ziekenhuis' (Estimated 42 min driving time)



Adress Maasstadweg 59, 3079 DZ Rotterdam **Phone:** 010 – 291 19 11
Website https://www.maasstadziekenhuis.nl/
Open 24 hours a day, 7 days a week.

Appendix 4: Telephone list

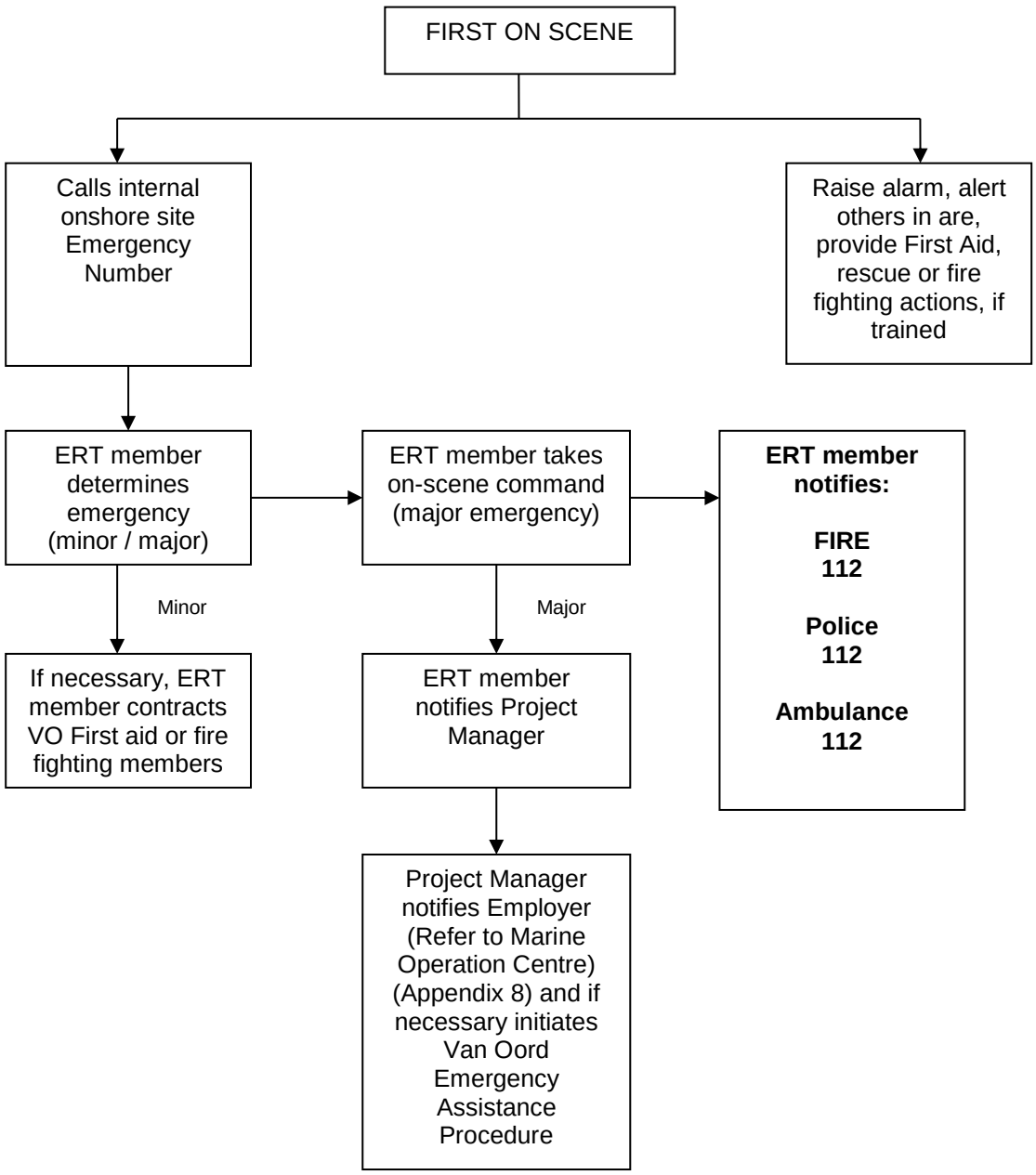
Please note, the telephone list is constantly updated.

Emergency contacts		
Emergency service	**Contact details**	**E-mail / Website**
National alarm number on land	• 112	
Van Oord Emergency Response Team (Rotterdam) To be used as part of VOMS 1.06 Emergency Assistance procedure	• +31 (0) 10 590 1171	
Marine Operation Centre (TenneT) The full TenneT Emergency Notification Flow can be found in appendix 8 of the HKZ Emergency Response Plan	• +49 (0) 5132 89 2400	TennetOffshore.MOC@tennet.eu
National Coast Guard NL - Alarm number VHF 16 to be used for emergency contact when outside of the Maasmond breakwater	• +31 900 0111 • VHF 16	
National Coast Guard NL - Non urgent matters	• Less urgent matters: +31 223 542300 • Telefax (24 hours): +31 223 658358 • Continuous radio listening watch on: VHF 16 • DSC: VHF Channel 70 and MF 2187.5 kHz • Callsign during SAR: Den Helder Rescue • Call sign for other matters: Netherlands Coastguard • MMSI nr.: 002442000 • NSA nr.: 1059	ccc@kustwacht.nl https://www.kustwacht.nl/nl
Vessel Traffic Services / Duty Officer VHF 11 to be used for emergency contact when inside Alexiahaven	• +31 10 252 2510 • VHF 11	
Port of Rotterdam / Harbour Coordination Center (HCC)	• VHF 11	
Rijkswaterstaat	• +31 (0) 88 797 05 00	handhavingzh@rwd.nl (incident reporting and notification)
SodM (Staatstoezicht op de Mijnen)	• +31 (0) 6 533 88 722	https://www.sodm.nl/contact/calamiteit-melden

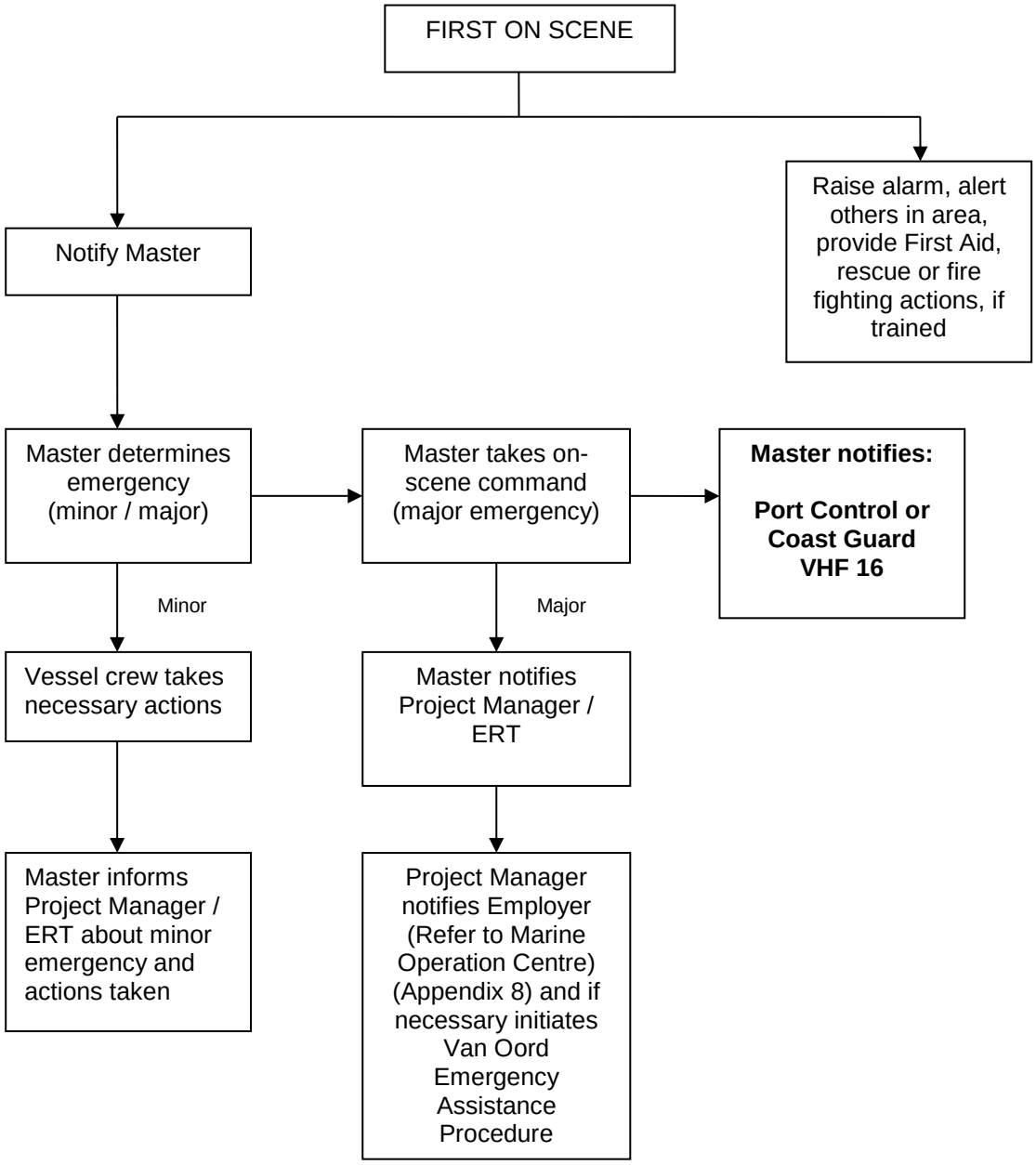
Project Contacts			
Name	**Role**	**Phone**	**Office / Email**
Kees Kramer	Captain Friendship II	[redacted]	[redacted]
Peter Brands / Herman Bijsterbosch	Captain Iguazú	[redacted]	[redacted]
Brénousky Breeveld	Project Engineer	[redacted]	[redacted]
Coen van Leeuwen	Superintendent	[redacted]	[redacted]
Saskia Rijtema	Project Director	[redacted]	[redacted]
Koos Boom	Operations Manager	[redacted]	[redacted]
Leonard Kok	Operations Manager	[redacted]	[redacted]
Vincent van Nesselrooij	Chief Surveyor	[redacted]	[redacted]
Joan Danner	HSE Manager	[redacted]	[redacted]

External Contacts			
Name	**Role**	**Phone**	**Office / Email**
Marius van den Ouden	Port of Rotterdam	[redacted]	
Pieter Nordbeck	Port of Rotterdam	[redacted]	

Appendix 5: Onshore emergency flowchart



Appendix 6: Offshore emergency flowchart



Appendix 7: Exercise report

	EXERCISE REPORT	
LOCATION :		

Type of drill /exercise * = Tick as applicable	Abandonment Drill * :	
	Fire/Explosion Exercise* :	
	Other (Specify):	

Date:	Start time:	Stop time:
Scenario :		
Equipment / Vessels used :		

Assessment	Yes	No		Yes	No
Was drill conducted as per drill scenario?			Was degree of participation by personnel adequate?		
Were emergency responses as per procedures?			If other units participated, was their response satisfactory?		
Was drill conducted safely?			Did all equipment function adequately?		
Were all personnel familiar with their assigned duties?			Was a de-brief conducted?		

Action taken to correct deficiencies noted :		
Assessing team's overall assessment :	Satisfactory * :	Unsatisfactory * :
Comments:		
List of attendees attached: Yes / No		

QHSE Co-ordinator	Observer	
Name : Signed : Date :	Name : Signed : Date :	Name : Signed : Date :

Appendix 8: Tennet Emergency Notification Flow

Please note this flow is used internally at TenneT ONLY and is only part of this procedure for the direct number to the Marine Operations Centre and for informative purposes.