

Manual



Oil Spill Contingency Plan

20" Gorm-Filsø Oil Pipeline operated by Ørsted Rev 07

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1. Objective

This plan describes the contingency in connection with and oil spill related to the 20" oil pipeline from Gorm E to Filsø [GOE] which is operated by Ørsted Infrastructure Assets, Offshore Operator [OFFOP].

1.1 Purpose of the Plan

The purpose of the contingency plan is to:

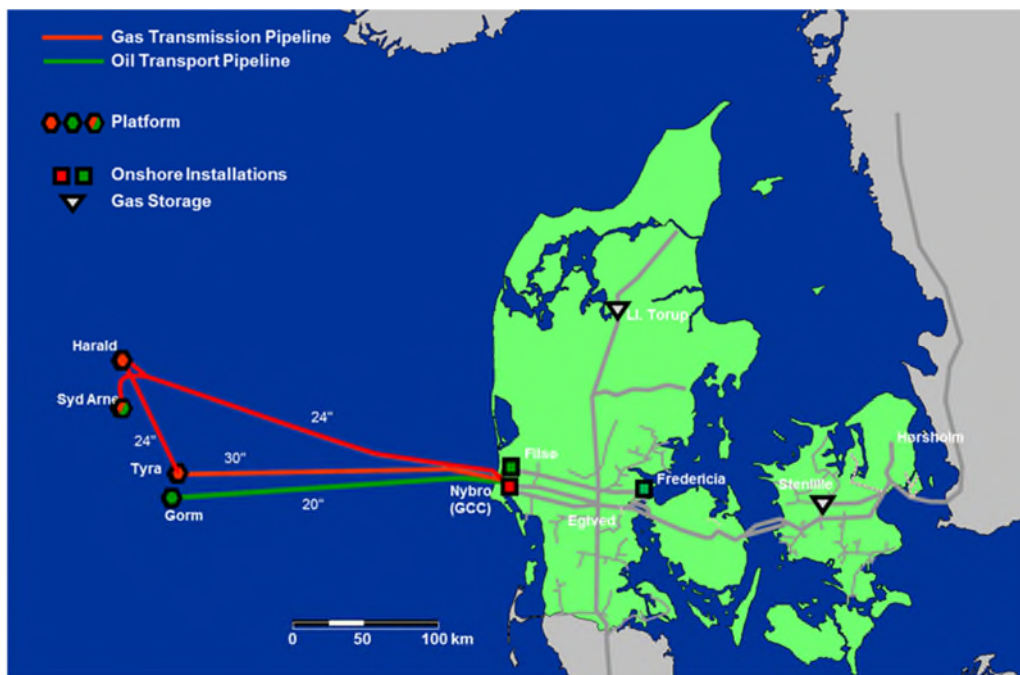
- Describe DOP's contingency in case of an oil spill from the GOE
- Define organization and responsibility - including Control Room at Nybro [NKC]
- Describe actions and provide guidelines for decision-making to ensure correct handling of oil spills
- Describe the interfaces (notification and communication) between the 3rd parties and OFFOP in the acute phase of an oil spill in the North Sea. The 3rd party contingency is based on supplier agreements concluded with external actors (Total E&P Denmark [TEPDK] for zone A and Esvagt A/S for zone B) for provision of operational resources.

2. Scope

2.1 Scope of the Plan

The contingency plan concerns oil spill incidents deriving from the GOE (green 'line' on the map below) that runs subsea from the GORM E platform to the Danish West Coast by the Kærgård plantation. The GORM E platform is a riser platform located in the Danish offshore sector from where stabilized crude oil from the TEPDK's operated oil and gas fields is transported to shore by the pipeline. The pipeline is connected to the Kærgård line valve station (not shown on the map below) onshore before entering the Filsø oil pumping station. The distance between coastline and Kærgård line valve station is approximately 485 m (varying due to seabed circumstances).

The 30" and the 24" subsea gas pipelines (red 'lines' on the map below) are also owned by Ørsted but are not covered by this oil spill contingency plan as these are transporting Natural gas and there is therefore no risk of oil spill from these.



3. Responsibility & Authority

OFFOP, on behalf of the GOE owner, has sole responsibility for immediately initiating the contingency plan when an oil spill has occurred, even if no threat to the environment is discerned ref.: LBK nr 1165 af 25/11/2019.

4. Contingency setup

The contingency response plan divides the oil recovery area into the following two types of zones:

Zone A: From Gorm E to the near-shore point where the supply boats involved in the given oil spill can maneuver safely

Zone B: From where Zone A ends and until the coast

The boundary between Zone A and Zone B is not a fixed geographical boundary, but will depend on the vessel, the tidal and weather conditions, but is expected to be around 10 meters water depths and approximately 3 kilometers from the coastline.

The operational duty organisation for oil spill combating consists of:

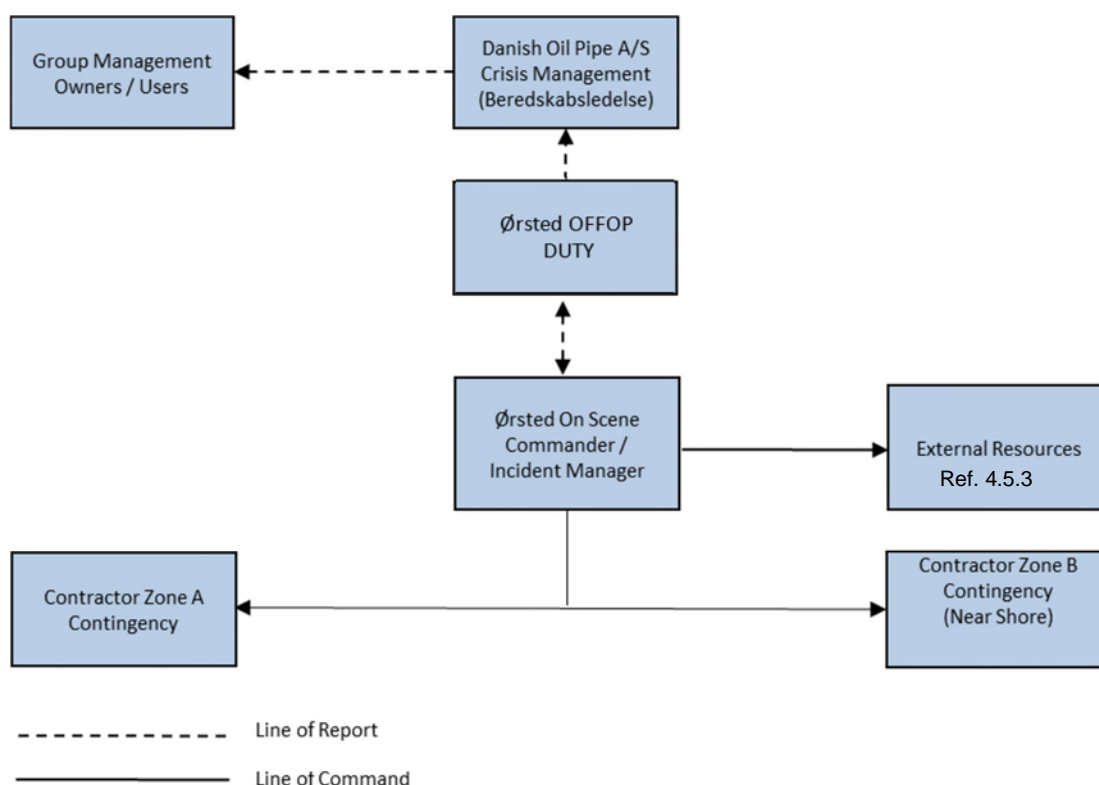
- OFFOP Duty, activated by NKC or a 3rd party
- Subcontractor TEPDK for Zone A combating activated by OFFOP
- Subcontractor ESVAGT for Zone B activated by OFFOP

The OFFOP Duty will collect all available information necessary to assess whether to initiate the procedures concerning oil spill

For further information on the decision-making process, see "DOP, Oil Transportation System, Emergency Plan" /6/.

4.1 Contingency response organisation in case of oil spills

The joint Ørsted OFFOP & DOP contingency response organization is shown below.



4.2 Crisis management unit

The management of DOP determines whether it is necessary to establish a crisis management unit consisting of e.g. key employees from Ørsted Gas Assets, Group Insurance, Media Relations and Ørsted OFFOP. /6/, section4/

4.3 Ørsted OFFOP DUTY Team

If the Ørsted OFFOP Engineering DUTY is notified, he/she will, along Ørsted OFFOP On Scene Commander DUTY, assess the necessity of initiating the procedures for oil spills.

The Ørsted OFFOP DUTY Team has several clearly defined functions and responsibilities with respect to response to oil spill.

OFFOP DUTY Team performs tasks as requested by the OFFOP On-Scene-Commander or other authorized person e.g. NKC.

Primary tasks are:

- Calculation of oil spill volumes, drifting patterns and degree of degradation.
- Assistance from TEPDK may be called in for calculation model. TEPDK will upon request make its oil spill drift prediction model available. /1/.
- Collection of data such as metocean data, results from aerial surveillance and tracking, data from listening pigs etc. to better understand the spill and reduce the potential environmental impact.
- Action plans may be adjusted as a result of the evaluation of the collected data.

4.4 Ørsted OFFOP Engineering Duty

If decided to initiate the procedures for combating of oil spills, the Ørsted Engineering Duty will be responsible of all communication and coordination between Head of Ørsted OFFOP and Ørsted Incident Manager (zone A) or On Scene Commander (OSR-OSC, zone B).

In coordination with the Head of Ørsted OFFOP the Ørsted Engineering Duty also establishes contact between Ørsted OFFOP and DOP.

If the procedures are initiated, the Ørsted Engineering Duty can join the Emergency Response room in Gentofte or Nybro within 2 hours' notice.

4.5 Ørsted Pipeline Technical Duty / Oil Spill Response On-Scene-Commander

The Ørsted Pipeline Technical Duty / Duty Oil Spill Response On-Scene-Commander must present him-/herself in one of following agreed places as quickly as possible (max. 5-hour notice from initial call).

Zone A: TEPDK Emergency room, Britanniavej 10, 6700 Esbjerg

Zone B: NorSea Group warehouse (ESVAGT), Kanalen, 6700 Esbjerg or directly on the Beach

She/he will assume the role of Oil Spill Response On-Scene-Commander (OSR-OSC) in zone B or Incident Manager in zone A.

During an oil spill incident, the OSR-OSC's responsibility and tasks include:

- Initiate investigations related to the oil spill site and cause of the spill
- Take leadership of control efforts if it is decided to mobilize the by TEPDK established Zone A contingency
- Take leadership of control efforts if it is decided to mobilize Esvagt established Zone B contingency
- Keep the Ørsted Engineering Duty updated on the situation and any development
- Assess the incoming information and if possible ensure that the drifting pattern of the oil spill is calculated
- Organize the necessary technical support
- On a continuous basis keep log of events

4.5.1 Ørsted Incident Manager, Zone A

In the event of mobilizing TEPDK for an Oil Spill Incident, the Incident Manager shall be present in the emergency response room at TEPDK premises alongside the TEPDK Emergency Management Team.

TEPDK will supply 2 vessels with trained crews for the deployment of equipment during an oil spill incident.

TEPDK will also provide Emergency Management Team who is responsible for arranging appropriate frontline support to the incident level. The exact composition of the Emergency Management Team will be dictated by the nature and scale of an emergency incident.

Ørsted OFFOP have the option of having a representative on boards the vessel(s) to the extent that this does not delay or otherwise impair the provision of the Services.

The Emergency Management Team is a group of trained personnel who are directly involved in supporting the On-Scene Commander with logistics, resources, coordination activities and technical advice.

The Emergency Management Team shall support the response activity, communicate with internal and external stakeholders and keep a permanent log of the activities and actions undertaken in response to an incident.

4.5.2 Ørsted On-Scene-Coordinator, Zone B

The Ørsted On-Scene-Coordinator holds the ultimate responsibility for the clean-up operation.

As contractor, Esvagt A/S appoints a beach coordinator (Strike Team Coordinator) on site whose task it is to supervise the containment work and recovery activities and ensure that all resources are correctly allocated according to the plan. The coordinator works under the instructions of the Ørsted OSR-OSC.

For further information on the zone B preparedness see Esvagt Oil Spill Manual /7/. This manual details the specific equipment and operation during the response.

4.5.3 External resources

Any external resource that that be considered or applied in case of need but are not necessarily under contract with Ørsted. These can include but not be limited to waste handling facilities, Oil Spill Response Ltd, vessel owners, machinery owners, etc.

4.6 Duty Lists

Updated Duty lists for Ørsted is always available in NKC

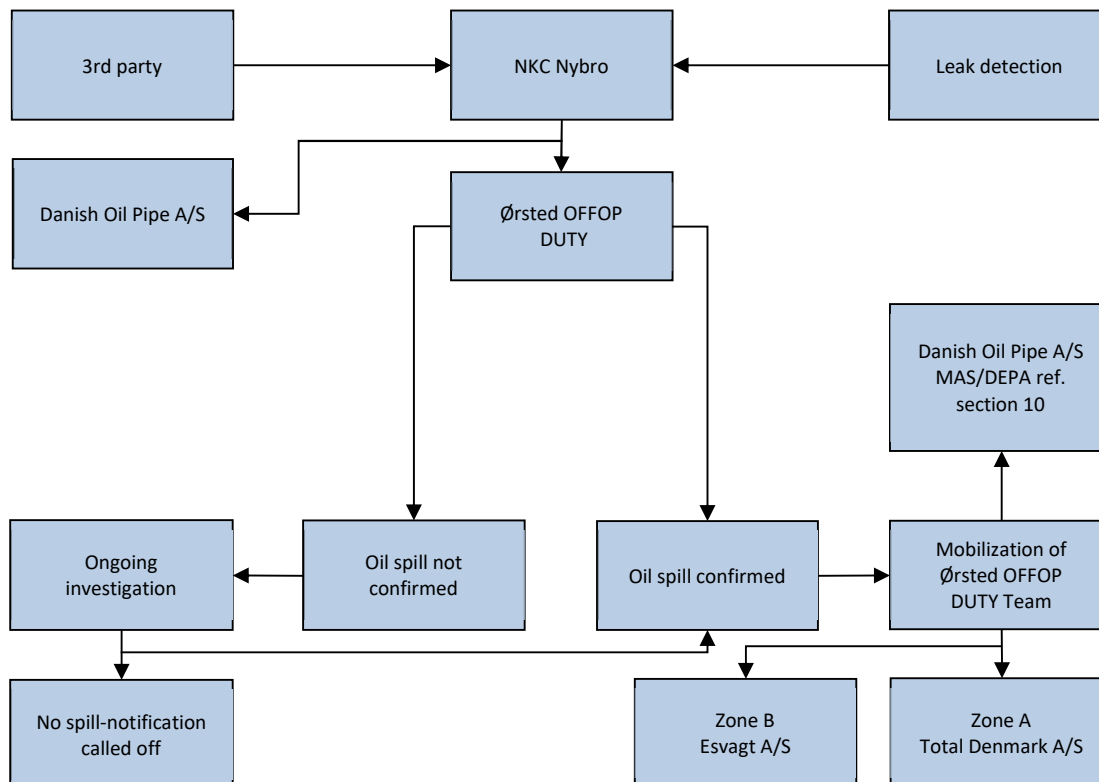
The duty list is updated on weekly basis or if any changes as duty personnel and telephone numbers are changing.

5. Notification

5.1 Notification route

The notification of an oil spill incident will take place as shown below. Oil spill can either be detected visual by for example 3rd party (Esvagt, helicopter etc.) or automatic by leak detection device. When visual detected NKC must be contacted. When automatic detected NKC will receive an alarm.

When an oil spill is confirmed the reporting policy in section 10 must be followed.



5.2 Notification Procedure

Mobilization notification from Ørsted OFFOP to the duty in Esvagt A/S (Zone B) or TEPDK (zone A) is confirmed by E-mail to Esvagt Operation Duty or TEPDK Operation Control Centre following by phone call.

Esvagt A/S - (open 24/7)

Dokvej 4

DK-6700 Esbjerg

Tel.: +45 78 73 07 30

Email: opr@esvagt.dk

TEPDK

Operationscentret (DOCC) – (open 24/7)

Britanniavej 10

DK-6700 Esbjerg

Tel: +45 79 11 12 80 or +45 40 20 72 09

Email: ep.tepdk-docc@total.com

The TEPDK operation centre will immediately initiate notification procedures and inform relevant responsible personnel for spills in Zone A.

5.3 Authorities - Government Coordination Committee

A Government Coordination Committee is established according to statutory Order no. 1199 of October 23, 2015.

5.4 Ørsted single point of contact

Ørsted's duty functions for oil spill response can be reached through NKC on phone number +45 7673 3271.

6. Procedure and combating zones

6.1 Methods for combating oil spills

The preferred response strategy for oil spills is containment and recovery.

Dispersant spraying may be chosen, once approval from the DEPA has been sought and given. Ref. section 7.4

Method used in Zone A:

The method to use in zone A is according to agreement with TEPDK "Agreement on the Provision of Emergency Spill Response Services" interfaced to internal TEPDK Oil Spill Contingency Plan.

Ørsted OFFOP will place an Incident Manager at TOTAL. Total will lead the combatting operation according to same procedures as for Total's oil spill contingency ref /10/. Ørsted's Incident Manager will have the right to approve or reject the strategy.

TEPDK has two DESMI speed sweep 1500 systems in operation:

- One containerized DESMI Speed Sweep 1500 system with in-built skimmers and a 750m³ liquid storage capability. Stored permanently on an OSV for Total offshore installations – ready for deployment within 4 hours.
- One containerized DESMI Speed Sweep 1500 system with in-built skimmers. Stored permanently on an offshore location for Total – ready for deployment within 8 hours onto an OSV with app. 1.000 m³ liquid storage capability.

TEPDK shall own, store and maintain all oil spill response equipment.

TEPDK will ensure that each containerized spill response package is inspected according to maintenance guidelines prepared by the equipment manufacturer. Regarding the recovery capacity please see reference /10/.

A third-party evaluation of the set-up is available, see reference /9/. According to the evaluation the expected oil recovery volume of one DESMI unit is 129 – 325 m³ pr day (8 hours operation). This means that a worst-case spill of 1440 m³ can be recovered within 2 to 5 days using 2 DESMI units depending on the conditions.

Methods used in Zone B:

Esvagt will lead the oil spill combatting operation in Zone B under the command and responsibility of Ørsted's On Scene Commander according to the procedures in ref. /7/.

Esvagt provide the following equipment:

- 600 m Ro-Boom Ocean booms rolled on hydraulic winches in sections of 200 m and placed in container
- Diesel compressor supply unit for preparation and launching of oil booms
- Rescue line launcher to establish connection between the oil boom towing vessel and land
- Linkage between oil boom and vessel consisting of bridles, wires etc.
- Crane trucks for transportation of equipment
- Vessels to towing the oil booms

The expected maximum response time for the vessel and equipment is 18-24 hours to site, however under normal circumstances a vessel will be ready for mobilization within 8 hours.

The boom will be transported by truck and launched from the coast near the oil spill site.

Recovery of the oil spill will, depending on its position, the wind and the current, take place according to one of the two methods listed below:

1. A semicircle formed by the boom between the coast and the vessel is maintained as an "artificial groyne" to form a funnel close to shore in the direction of the current. Recovery of the oil will take place from the shore by means of the mobile oil waste collector and will then be transported by land for further treatment.

2. Use the booms to create a groyne on the beach with one end on shore and one end attached to a vessel. The recovered oil is routed to the recovery area by the vessel in use which will then fall off with the drift in the direction away from the coast. Another vessel will take over the end of the boom which is secured at the coast. Both vessels will then fall off with the drift in the direction away from the coast, maintaining the semicircle of the boom. Recovery of oil will take place as close to the coastline as possible, considering that the vessel equipped with an oil recovery skimmer is from Zone A. Thusly; the oil recovery capacity is similar to the capacity of Zone A, meaning that a worst-case spill can be recovered in 2-5 days of operation. Esvagt will provide necessary vessels and equipment. The vessels will be either from Esvagt's own fleet or chartered on the free market. The skimmer will come from the Zone A setup.

6.2 Worst case oil spill scenario

6.2.1 Volume

Ørsted is at the time of approval of this present procedure in the process of publishing a revised setup for the oil spill combatting. The new scenario was first based on a worst-case spill volume of 8000 m³ over 5 days. The volume has since the modelling though been re-evaluated and conservatism has been scrutinized as well as a new delta volume alarm. This alarm measures the difference between the volume entering at Gorm and the volume received at Fredericia. Should this volume over a period of 12 hours exceed 35 m³/h (total volume of 420 m³) an alarm will go off at

NKC. NKC will then qualify the validity of the alarm within 10 minutes and order shut down of pumps at Gorm.

Should the spilled volumed amount to less than 35 m³/h over 12 hours it is expected that spill will be observed and reported by a 3rd party by one of the following means within 36 hours: aerial surveillance, commercial vessels, crew transfer helicopters and satellites. After reporting it is expected that 4-5 hours will pass before Ørsted/NKC has had the report and qualified shutting down the pumps at Gorm. The total amount of spilled oil will then amount to a maximum of 1440 m³.

It is noted that is extremely unlikely with a spill less than 35 m³/h resulting in the more likely, but still very unlikely, scenario will be less than 500 m³ as the alarm will sound at 420 m³.

6.2.2 Spreading

The modelling for spreading presented below of oil on the water is based on 8000 m³ volume. A new spreading model is in the process of being ordered and produced. Until this new model has been run the 8000 m³ spreading pattern will be presented in this procedure.

The spreading is based on respectively expected arrival time and likelihood of shore impact of a near-shore spill at different locations along the Jutland West coast ref. /11/ table 15-3. The table distinguishes between spills at the four seasons of the year. The table shows the probability and shortest time to reach shoreline for a nearshore spill (19 km west of Henne Strand).

In the most unfortunate case of oil spill sufficiently close to the coast of Jutland it is unavoidable that the spill will reach shore before the response can be in place or in case of a small leak even before the leak has been discovered. However, it is expected that the response setup in most of such cases will be able to limit the damage and the amount of oil reaching shore.

Location	Probability and shortest time to reach shoreline (Nearshore Scenario - 8000 m ³)			
	December-February	March - May	June - August	September - November
Agger Tange, Nissum Bredning, Skibsted Fjord og Agerø	1% 10 days, 17 hours	None	1% 8 days, 12 hours	<1% 18 days, 13 hours
Gule Rev	6% 9 days, 11 hours	3% 8 days, 5 hours	4% 13 days, 2 hours	2% 16 days, 4 hours
Jyske Rev, Lillefiskerbanke	8% 11 days, 14 hours	5% 12 days, 10 hours	None	1% 12 days, 17 hours
S-H Wadden sea National Park	11% 7 days, 6 hours	16% 6 days, 9 hours	26% 4 days, 19 hours	7% 9 days, 0 hours
Sandbanker ud for Thorsminde	20% 4 days, 19 hours	12% 6 days, 15 hours	12% 4 days, 15 hours	8% 7 days, 14 hours
Skagens Gren og Skagerrak	<1% 13 days, 18 hours	None	2% 17 days, 6 hours	None
Sydlig Nordsø	58%	93%	96%	56%

	1 days, 8 hours	0 days, 21 hours	1 day, 20 hours	1 day, 13 hours
Sylt.Aussenr.- Oestl.Dt.Bucht	22% 6 days, 3 hours	35% 5 days, 10 hours	43% 5 days, 21 hours	15% 4 days, 18 hours
Thyborøn Stenvolde	28% 3 days, 22 hours	18% 4 days, 17 hours	21% 4 days, 1 hour	11% 4 days, 18 hours
Vadehavet med Ribe Å, Tved Å og Varde Å vest for Varde	59% 0 days, 19 hours	86% 1 day, 9 hours	97% 1 day, 4 hours	68% 1 day, 12 hours

6.2.3 Aerial surveillance




Aerial surveillance can be used to confirm or preclude if an oil spill derives from the oil pipe as well as characterization and spreading pattern of the spill ref. section 6.3 below. The decision to use of aerial surveillance will be based on the available information at the time.



In case of mobilization of aerial surveillance Ørsted will select the most appropriate supplier at the time of need. Besides the free market where a private aeroplane or helicopter can be mobilized with short notice Ørsted also holds an agreement with Total's crew change helicopter service that provides aerial surveillance upon request. In addition to the above OSRL can provide aerial surveillance as well. The aerial surveillance will take place from the most appropriate place which in most cases will be expected to be from Esbjerg Airport.

The purpose of the surveillance is to establish the colour code, size and drift pattern of the spill.

6.3 Hydrocarbon Spill Characterisation

6.3.1 Bonn Agreement Oil Appearance Colour Code

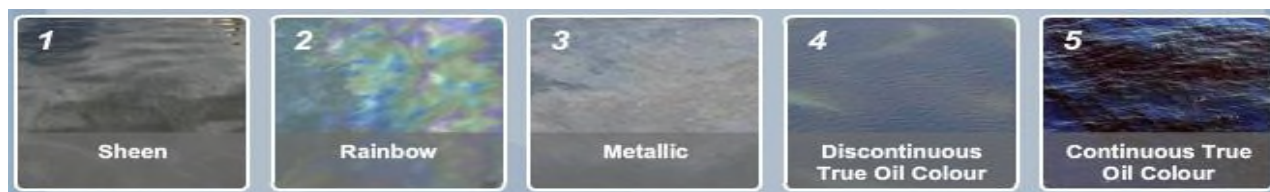
Code		Description
Code 1 Oil Sheen Silvery ($< 0.3 \mu\text{m}$)		The very thin films of oil reflect the incoming light better than the surrounding water and can be seen as a silvery or grey sheen. Above a certain height or angle of view the observed film may disappear.
Code 2 Oil Sheen Rainbow ($0.3 \mu\text{m} - 5.0 \mu\text{m}$)		Rainbow oil appearance is caused by an optical effect and independent of oil type. Depending on angle of view and layer thickness, the distinctive colours will be diffuse or very bright. Bad light conditions may cause the colours to appear duller. A level layer of oil in the rainbow region will show different colours through the slick because of the change in angle of view. Therefore, if rainbow is present, a range of colours will be visible.
Code 3 Oil Sheen Metallic ($5.0 \mu\text{m} - 50 \mu\text{m}$)		Although a range of colours can be observed (e.g. blue, purple, red and greenish) the colours will not be similar to 'rainbow'. Metallic will appear as a quite homogeneous colour that can be blue, brown, purple or another colour. The 'metallic' appearance is the common factor and has been identified as a mirror effect, dependent on light and sky conditions. For example, blue can be observed in blue-sky conditions.

Code 4 Discontinuous True Colours (50 µm – 200 µm)		For oil slicks thicker than 50 µm the true colour will gradually dominate the colour that is observed. Brown oils will appear brown, black oils will appear black. The broken nature of the colour, due to thinner areas within the slick, is described as discontinuous. Discontinuous' should not be mistaken for 'coverage'. Discontinuous implies true colour variations and not non-polluted areas.
Code 5 True Colours (>200 µm)		The true colour of the specific oil is the dominant effect in this category. A more homogenous colour can be observed with no discontinuity as described in Code 4. This category is strongly oil type dependent and colours may be more diffuse in overcast conditions.

6.3.2 Oil Spill Size Estimation

Calculate Spill Coverage

If the source / quantity is unknown, then a visual estimation can be attained based on the relationship between observed oil colour and its thickness using the Bonn Agreement Oil Appearance Code.



Bonn Agreement Oil Appearance Code see more description in sec. 5.3.1

CALCULATION:

STEP 1. Total area: Estimate total size of the area as a square or rectangle (in km²).

STEP 2. Oil Spill Area: Assess the area affected by the slick in km² calculated as a % of the total area (i.e. 80% of 10 km² = 8 km²).

STEP 3. Calculate area by colour: Estimate the area covered by each colour of oil as a % of area affected in km² (e.g. 70% rainbow, 30% metallic = 5,6 m² and 2,4 km² respectively)

STEP 4. Calculate quantity by colour: Multiply the area covered by each colour (Min and Max) by the appropriate quantity of oil in the table (e.g. 5,6 km² x 0,3 and 5,0 for rainbow and 2,4 km² x 5,0 and 50 for metallic).

STEP 5. Total quantity: Add all the quantity by colour figures to get total quantity of oil/m³.

STEP 6. Conversion: If necessary you can convert m³ to tonnes by multiplying total quantity in m³ by the Specific Gravity of the spilt oil.

Average Width (km)		km	Average Length in (km)		km
Step 1	Total Area (Width x Length) km ²				km ²
Step 2	Oil Spill Area (Estimated) km ²				km ²

Colour	Code	Minimum (m ³ / km ²)	Maximum (m ³ / km ²)	(Step 3) % of Area Affected	(Step 3) Area Covered km ²
Oil Sheen Silvery	1	0.04	0.3		
Oil Sheen Rainbow	2	0.3	5.0		
Oil Sheen Metallic	3	5.0	50		
Discontinuous True	4	50	200		
Continuous True	5	200	>200		
Calculation for Area Covered: km ² = Area / 100 x % of Area Covered. This should be calculated for each code to give area covered by colour					
Colour	(Step 3) Area Covered km ²	(Step 4) Min Volume (m ³)	(Step 4) Max Volume (m ³)		
Oil Sheen Silvery					
Oil Sheen Rainbow					
Oil Sheen Metallic					
Discontinuous True					
Continuous True					
Step 5	Total Volume (m ³)				
Step 6	Total Volume in Tonnes (m ³ x SG)				

6.4 Division of combating zones

The oil spill area is divided into two zones which are defined by different requirements for equipment and control methods.

Zone A (offshore contingency) is defined as:

From Gorm E to the near-shore point where the supply boats involved in the given contingency situation can manoeuvre safely.

The set-up for spill response in Zone A is an offshore contingency where containment and recovery of oil will be performed by means of vessels only.

Zone B (near-shore contingency) is defined as:

From where Zone A ends and unto the coast.

The set-up for spill response in Zone B is a near-coast contingency where containment will be initiated from the coast and recovery, depending on the circumstances, will be performed either by means of vessels or from the coast.

6.5 Storage of recovered oil

Storage and disposal of offshore recovered oil will be managed as part of TEPDK's existing contracts for waste handling, treatment and disposal and is available 24/7.

This is in accordance to TEPDK agreement /1/.

Oil recovered along the coastal zone by mobile oil waste collectors is stored in oil storage tanks supply by e.g. Avista - www.avista-oil.dk. There is no agreement in place with Avista for this service since they are expected to have sufficient capacity. This expectation is regularly confirmed with Avista who has a 24/7 duty service.

7. Combating equipment for oil spill response

7.1 Location of equipment for oil spill response

Zone A:

- DESMI speed sweep 1500 systems permanently stored on a PSV located at TEPDK offshore installations.
- DESMI speed sweep 1500 systems permanently stored on an TEPDK offshore location.

TEPDK organize that all systems are properly and regularly maintained and kept ready for immediate response in Zone A.

Zone B:

- Esvagt owned oil spill combating equipment is located in NorSea Group warehouse, Esbjerg.
- DOP owned oil spill combating equipment is partly placed in a container in NorSea Group warehouse, Esbjerg, and partly with Lorenz Lauridsen, Hvide Sande.

Esvagt A/S is responsible for supervision and maintenance of all oil spill combating equipment, incl. the equipment owned by DOP.

Ørsted OFFOP visually checks the equipment at least once a year.

7.2 Mobilization time and Oil spill response equipment for Zone A

The following applies according to agreement with TEPDK:

- 1 containerized DESMI Speed Sweep 1500 system with in-built skimmers and a 750m3 liquid storage capability. Stored permanently on an OSV for Total offshore installations – ready for deployment within 4 hours.
- 1 containerized DESMI Speed Sweep 1500 system with in-built skimmers. Stored permanently on an offshore location for Total – ready for deployment within 8 hours onto an OSV with app. 1.000 m3 liquid storage capability.
- Access to helicopter surveillance, if needed
- Access to Oil spill drifts prediction models

The time for transportation to site offshore is approximately 10 hours in worst case scenario.

Please note that oil recovery systems, oil booms and transport material fulfill the requirements in § 9 part 4 of order 909/2015 according to supplier data sheets.

7.3 Mobilization time and Oil spill response equipment for Zone B

The following applies according to agreement with Esvagt A/S:

- Vessels for use with the Zone B contingency are chartered by Esvagt A/S
- Coordination of vessel activities (time and place) with activities onshore
- Trucks for transportation of equipment to the near-shore area must be ready for cargo at the latest 3 hours after a notification.

The expected maximum response time for the vessel and equipment is 18-24 hours to site, often quicker based on Esvagt's and the free market's availability of appropriate vessels at the time. It is preferable to mobilize a vessel that could also function as mother vessel in a Zone A situation should the operation lead to Zone A but to start out it will be sufficient to have a vessel that has sufficient power to maintain the groin from the beach. This vessel can then be substituted when and if applicable.

The availability of appropriate vessels will be determining for the mobilization time. It has been qualified that there is reason to expect available vessels free at the Esbjerg Harbor within 8 hours, which will allow for faster mobilization than the 18-24 hours mentioned above.

The response time for equipment is approx. 6 hours to the site (beach).

Equipment:

- 600 m Ro-Boom Ocean booms rolled on hydraulic winches in sections of 200 m and placed in container
- Diesel compressor supply unit for preparation and launching of oil booms
- Rescue line launcher to establish connection between the oil boom towing vessel and land
- Linkage between oil boom and vessel consisting of bridles, wires etc.
- Crane trucks for transportation of equipment
- Vessels to towing the oil booms

Please note that there shall be access for overlap to zone A oil spill preparedness

Please note that oil recovery systems, oil booms and transport material fulfill the requirements in § 9 part 4 of order 909/2015 according to supplier data sheets.

7.4 Response equipment for dispersion

Dispersant is not part of the combating method. Should dispersant be considered most appropriate under the given condition's dispersant shall be mobilized but the dispersant must under no circumstances be used without prior permission from the Danish Environmental Protection Agency. The Danish [DEPA's] practice for accepting dispersants are in accordance with the Bonn Agreement's Counter Pollution Manual section 2.5 Dispersants and Annex 1 to this., where at least two other contracting parties have approved such dispersant.

8. Personnel

To operate the oil spill combating equipment specified in in Section 6, a certain number of trained operators, trained in oil spill combating, will be on contractor-managed 24/7 call-in throughout the year for urgent action.

In the case of a notification following personnel is available:

- Operators are available on vessels immediately to operate the equipment for use in Zone A
- 9 call-in operators to operate the equipment for use in Zone B

9. Communication

The following channels on marine VHF must be used relating to containment and recovery of an oil spill.

- Emergency channel / rescue channel: VHF 16
- Channels for operational use: VHF 67 and 73

10. Reporting

10.1 Reporting to public authorities

All spills (unintended discharge to the sea) of 70 liters or more of oil* and all spills of chemicals no matter the volume shall immediately be reported to the Joint Operation Centre through e-mail to mas@sok.dk, telephone no. +45 72 85 03 70 ref. DEPA reporting procedure of 16 January 2018.

Spills larger than 5000 liters of oil* shall in addition be reported by telephone to MAS and immediately after that by telephone to the Danish Environmental Protection Agency (DEPA). All spills, for which it is evaluated that they can be contained and recovered, and no matter the volume, shall in addition immediately be reported by telephone to DEPA.

All spills of oil* smaller than 70 liters shall be reported to DEPA every half year. The operator shall keep a log book on such spills and on the follow up actions. The log book and the report to DEPA shall also comprise spills of 70 liters or more of oil* and all spills of chemicals reported as mentioned in the beginning of this section.

The operator shall send the report to DEPA at the latest on March 1 for spills taken place in the second half of the previous calendar year, and at the latest on September 1 for spills taken place in the first half of the ongoing calendar year.

The report will only be sent if any oil spill has been logged.

*) Comprises crude oil and crude oil-based hydrocarbon products (e.g. diesel) oil collected in draining facilities etc.

**) The initial contact to DEPA should be through +45 72 54 40 00. If the call is taking place during the opening hours (Monday-Friday 9.00 am. to 4.00 pm.) it will be redirected to the officer in charge

in DEPA. If this person is not available or if the call to DEPA is taking place outside the opening hours the following person should be contacted directly: Mr. Henrik Bechmann Nielsen on +45 22 46 85 34.

The oil spill incident report must contain the following information, if available:

- Date/time at which the oil spill is reported
- Position
- Possible cause (if known)
- Size of the area affected
- Film thickness
- Estimated volume
- Wind direction and speed
- Visibility
- Direction and speed of the current
- Waves with indication of wave height
- Water temperature
- Precautions taken
- If the spill has been stopped

The report must be continuously updated until the case is closed. The continued reporting on the developments of the spill shall go to DEPA. Danish Oil Pipe will issue.

This report is composed and updated by Ørsted OFFOP and forwarded to DOP.

10.2 Close Out Report

After any oil spill combat action, a report must be worked out with contributions from all involved participants.

This report must contain:

- Description of the event and background information
- Volume of oil spill
- Cause of oil spill
- Description of containment and oil recovery activities
- Review of procedures and methods
- Any recommended changes in procedures and methods
- Recommended precautions to be taken to avoid repetition

This close-out report is prepared by Ørsted OFFOP.

The report must be approved by DOP who signs and forward it to:

- MAS
- Danish Environment Protection Agency (DEPA)

It is the responsibility of Ørsted to evaluate and in the end determine if the response operation shall be recommended to be terminated. It is as such also Ørsted's responsibility not to terminate the response operation prematurely. DEPA will based on Ørsted's information evaluate if further response is needed by Ørsted. (ref. § 7 of order 909/2015).

11. Training and exercises for contingency preparedness and response

Training of all personnel involved in spill response and use of equipment at different levels will be organized on regularly intervals.

Ref. § 11 of order 909/2015 planning of exercises will be in close corporation with relevant authority DEPA shall be informed on timing, content and planning of exercises. Further, DEPA may require exercises to be held without further notice to the organizations involved.

11.1 Desk top exercises

Desk top exercises will be held within DOP and Ørsted OFFOP to ensure that all parties are fully acquainted with both the contents of the contingency plan and the scope of tasks to be solved.

11.2 Exercises with limited mobilization

Zone A

DOP and Ørsted OFFOP participates, in the regularly training sessions which TEPDK organizes on combating equipment for offshore use approximately once per year.

Zone B

DOP and Ørsted OFFOP plans and organizes in collaboration with Esvagt A/S training sessions on use of combating equipment for use in near-coastal areas.

12. Safety and environment

12.1 Safety

The work performed by the oil spill contingency must be organized and carried out in such a manner that accidents and near-miss incidents are prevented. Personal protective equipment must be provided for all work tasks undertaken by the oil spill contingency, e.g. oil resistant clothing, gloves, and other garments used for oil recovering.

Contractors are required to report all accidents and near-miss incidents to Ørsted OFFOP.

All accidents/incidents relating to tasks performed in Zone A and Zone B by the oil spill contingency must be reported. Tasks may be oil recovery, training, maintenance and transportation of equipment.

A risk assessment is to be made prior to mobilisation and Tool Box Talk prior to work tasks.

12.2 Environment

Whenever oil spill activities take place, whether training or actual oil recovery activities, they must be undertaken with the highest concern towards impact to the surrounding environment; this also applies when selecting equipment for the various activities.

The contractor shall annually submit environmental accounts to Ørsted. The accounts must include information on consumption of fuel, lubricating oil, paint and other environmental contaminants. Consumption relating to both training and maintenance of equipment must also be reported.

13. Definitions/Abbreviations

DEMA	Danish Emergency Management Agency
DEPA	Danish Environment Protection Agency
DK	Denmark
DMI	Danish Meteorological Institute
DOP	Danish Oil Pipe A/S
DOCC	Danish Onshore Control Centre (TEPDK)
EDAG	Pig manufacturer (part of German Company FFT)
ERC	Emergency Response Centre
Esvagt	Esbjerg Vagtskibsselskab
GOE	the 20" oil pipeline from Gorm E to Filsø
MAS	Maritime Assistance Service
NKC	Nybro Kontrol Center
OSR-OSC	Oil Spill Response On-Scene-Commander
OSC	On Scene Commander
OFFOP	O&M offshore pipelines
O&G	Oil and gas
O&M	Operation and Maintenance
PSV	Platform Supply Vessel
TEPDK	Total E&P Denmark
VFK	Værnfælles Forsvarskommando

14. Basis & References

14.1 Regulatory requirements

- § 34 a of the Law on Environmental Protection of the Sea (no. 1033 of September 4, 2017)
- Statutory Order on reporting according to the Law on Protection of the Marine Environment (no. 874 of June 27, 2016)
- The Ministry of Environment's "Statutory Order no. 909 of 10/07/2015 on preparedness for pollution of the sea from oil and gas plants, pipelines and other platforms".

14.2 References

- /1/ Contract "Agreement on the Provision of Emergency Spill Response Services", concluded between Danish Oil Pipe A/S and Total E&P Danmark A/S).
- /2/ Contract "Strandberedskab", concluded between Danish Oil Pipe A/S and ESVAGT A/S
- /3/ Adendum 4 til Driftsaftale for Olierørledningen fra Nordsøen til Fredericia mellem DONG Oil Pipe A/S og DONG Energy A/S, 15.08.2017. Ørsted ProArc No. INF-099568.

- /4/ Driftsaftale for Olierørledningen fra Nordsøen til Fredericia mellem DONG Oil Pipe A/S og DONG Energy A/S, 1998. Ørsted ProArc No. INF-099568.
- /5/ Danish Oil Pipe A/S, Oil Transportation System, Emergency Plan (Råolietransportsystem, Beredskabsplan) Ørsted ProArc No. 54-000-GH-0810.
- /6/ Emergency Repair Manual, 20" North Sea Gorm E – Filsø Oil Pipeline, Doc. No. EP-080667. Ørsted ProArc No. 51-200-GH-0800.
- /7/ Esvagt Oil Spill Manual, INF-099940.
- /8/ Oil/ Chemical Spill Contingency Plan for TEPDK – DK-HSE-PRO-0030
- /9/ Equipment Capability Review, Document Number: CONS1452 (TEPDK)
- /10/ TOTAL OIL/ CHEMICAL SPILL CONTINGENCY PLAN FOR TEPDK, DK-HSE-PRO-0030 Rev. 5.0
- /11/ Ørsted Oil Spill Contingency Plan

14.3 Revision

Version	Approval	Revision information
01	13.02.2018	New Ørsted owned procedure General revision and updating the previously INEOS ver. 5
02	21.09.2018	Updated due to comments from DEPA
03	01.09.2019	General revision and updated do to new contract with TOTAL for zone A and new contract with ESVAGT for zone B. Agreement with INEOS is terminated 31 August 2019. All INEOS is removed
04	21.07.2020	General update
05	07.12.2022	Specific updates based on DEPA comments December 2022 and January 2023
06	23.01.2023	Specific updates based on DEPA comments January 2023
07	10.02.2023	Specific updates based on DEPA comments February 2023

The contingency plan must be revised, when modifications/changes take place concerning

- Responsibility /organization
- Personnel with special tasks
- Regulatory requirements
- Equipment and/or methods
- Significant changes to the risk identified
- Lessons learned from exercises