



Norwegian Clean Seas Association for Operating Companies (NOFO)

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NOFO STANDARD

Requirements for oil recovery vessels on the Norwegian Continental Shelf

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Foreword

The NOFO Standards are developed by the Norwegian petroleum and shipping industry in order to ensure satisfactory safety and efficiency in oil spill response operations on the Norwegian Continental Shelf.

The NOFO Standards have been developed and based on recognized standards, in addition to provisions considered to be necessary in order to meet the requirement in the Norwegian petroleum and shipping Industry. Where relevant, the NOFO Standard may be used as the Norwegian industry's contribution to the international oil spill response work.

The NOFO Standard are administered and published by NOFO in Norway.

This revision is an adjustment of Rev. 04 August 2005.

Principal amendments include:

- Amended from the requirement relating to dedicate pipeline and pump system to a combined system for use in ORO and loading / discharge system
- From demountable to fixed, permanent skimmer platform
- Minimum tank capacity changed from 1 000 m³ to 1 500 m³
- Oil radar requirement
- Requirement of an MOB boat in davit on port side.

1 INTRODUCTION

This document specifies the requirements that must be met by all vessels built according to the NOFO standard.

It is assumed that vessels satisfy all the requirements set for ocean-going oil recovery vessels by Norwegian authorities and classification societies.

1.1 Definitions and terms

| | |
|--|--|
| Area standby vessel | A standby vessel that has been approved by the Norwegian authorities to cover emergency preparedness for several installations in one area. The vessel must also satisfy the NOFO standard when it has NOFO oil recovery equipment permanently installed on board. |
| Design phase | Vessels under construction and before the hull has been started |
| Dispersant | Liquid chemical to carry out dispersion Use of a dispersing agent has been regulated in separate regulations. |
| Dispersion | Dispersants are used to accelerate the natural dispersion of an oil slick. Dispersants promote the formation of numerous tiny oil droplets, and delay the reformation of slicks because they contain surfactants. This helps promote rapid dilution by water movement and the droplets of oil are eventually broken down by bacteria in the water. Therefore, dispersant can simply be compared to soap. Chemical dispersion is considered to be used in two different situations: <ul style="list-style-type: none"> ▪ As a supplement to mechanical recovery of large oil spills ▪ As an alternative to mechanical recovery of minor oil spills |
| Dedicated emergency preparedness / Oil Recovery Vessel | An offshore vessel that meets the requirements in the NOFO Standard and has NOFO's oil recovery equipment permanently installed on board. |
| DP | Dynamic Positioning |
| Eex | Types of standard for electrical apparatus in hazardous areas |
| Emulsion | Physical phenomenon where drops of water penetrate the oil and form a viscous, stable slick with a water content of up to 80 per cent. The ability to form emulsions varies depending on the type of oil. |
| Heavy oil skimmer | Skimmer used to recover highly viscous oil from the sea |
| HPU | Hydraulic Power Unit |
| IR camera | Infrared camera |
| MOB boat | Man-over-board boat |
| NOFO | Norwegian Clean Seas Association for Operating Companies |

| | |
|-------------------|--|
| NOFO OR vessel | Offshore vessels that satisfy the NOFO standard |
| NOFO tug | Vessel that has been equipped and approved for towing NOFO oil booms |
| Nozzle | Equipment that using pressure transforms liquid into a cloud of droplets |
| Oil boom | Boom used to recover and concentrate free flowing oil in order to be pumped aboard the oil recovery vessel |
| Oil radar | Oil radar senses oil, as oil has a wave dampening effect |
| Oil skimmer | Equipment used to pump oil from the sea to the oil recovery vessel |
| Oil skimmer crane | Technical equipment for lifting the oil skimmer between the deck and the sea |
| OR vessel | Oil Recovery Vessel |
| ORO | Oil Recovery Operations |
| Overflow skimmer | Skimmer used to recover oil from the sea |
| Spray boom | Adjustable device with nozzles positioned in order to distribute dispersing agent evenly over a certain width outside the side of the ship. |
| Steam nozzles | Nozzles for supplying steam directly into liquid for heating |
| System index | Index that states the tank capacity for recovered oil on a NOFO OR vessel, e.g.: Tank capacity 1 500 m ³ gives a system index of 1.5. Tank capacity 2 300 m ³ gives a system index 2.3, etc. |
| Thermal capacity | Factor used in power calculations for heating fluid, In this case, the thermal capacity has been set at 3.44 kJ/kg/°C for a 50% mixture of oil and water |
| Tank capacity | Capacity of a NOFO OR vessel to take recovered oil on board |
| Transrec | Derived from "Transfer and Recovery". Combined handling equipment for hose and skimmer. |
| Zone 2 | Normal safety level. Safe in normal operation where the likelihood of an explosive atmosphere is low and would be short in duration. |

1.2 Requirements

Vessels contracted after 1 May 2009 must follow the standard according to the 2009 revision. The revision is not retrospective.

The vessel must be ready for ORO operation with 2 hours of the ORO tanks being loaded and, if necessary, cleaned.

In order to meet the response time requirement in the plans, the vessel must be able to achieve at least 14 knots in normal loaded condition.

It is a requirement for a DP system with minimum IMO Class 1.

1.3 Submitting documentation for new builds

In the case of new builds to be certified according to the NOFO standard, documentation including drawings must be submitted to NOFO for approval in the design phase. Ref. section 5.1.

In the case of existing vessels to be redesigned for certification according to the NOFO standard at a later date, documents, including drawings, must be submitted for approval as soon as possible. Ref. section 5 - Approval.

1.4 Non-conformance with requirements

NOFO may accept non-conformance with its standard in cases where:

- the non-conformance does not mean that the appropriateness of the vessel in ORO is seriously compromised, or
- the non-conformance means that the appropriateness of the vessel is improved.

When submitting documentation, each non-conformance with the Standard must be clearly identified. All non-conformance with the Standard must be clarified with NOFO during the (re)design phase. Each non-conformance will be evaluated individually.

In the case of existing vessels to be upgraded for certification according to the NOFO 2009 standard, documents, including drawings must be submitted for approval as early as possible.

Treatment of non-conformance follows NOFO's processes. Approved non-conformance must be registered as comment on the certificate.

2 VESSELS

2.1 Tanks

2.1.1 ORO Tanks

An active effort must always be made to achieve the largest possible tank capacity.

Under no circumstances must the tank capacity for storage of recovered oil be less than 1 500 m³.

The certificate document must state the system index / tank capacity (e.g.: tank capacity of 1 700 m³ is given using system index 1.7). (Ref. section 1.1, page 2. Definitions and terms)

The ORO system must be included as a screen on the vessel's cargo operation system.

2.1.1.1 Tanks to be used in ORO

The tank capacity in ORO must be able to make use all of the following tanks:

- Mud tanks
- Brine tanks
- Base oil tanks
- Methanol tanks
- Special product tanks

- Staff tanks
- Chain boxes
- Fuel tanks

2.1.1.2 Tanks not included in the ORO tank capacity

The following tanks must not be included in the ORO tank capacity:

- Wing, bottom and other tanks with a lot of inner structure
- Freshwater tanks
- Tanks with a volume less than 50 m³

2.1.1.3 Cleaning pumps and pipe systems

Cleaning must be taken into consideration when designing the vessel. Pumps and pipe systems must be designed for easy access, or dismantling and cleaning.

2.1.2 Fuel tanks are for the vessel's operation

Dedicated fuel tanks, for the vessel's operation during an oil spill response operation, must be specified.

The tanks must have a capacity for a minimum 30-day oil response operation, of which 5 days will be steaming at 14 knots.

It must be possible to refuel the consumption tanks during an ORO operation. Dimensions and connections must be in accordance with NORSOK standard.

2.1.3 Freshwater tanks

The freshwater capacity must meet the needs of a 30-day ORO operation.

In addition to general consumption, the capacity requirement includes tank heating consumption.

It must be possible to refill the consumption tanks during an ORO operation. Dimensions and connections must be in accordance with NORSOK standard.

2.1.4 ORO tank heating

2.1.4.1 Heating capacity

All the vessels ORO tanks must be equipped with a permanent system for heating recovered oil / emulsion.

The system must make it possible to raise the temperature 15°C for a volume of 1 000 m³ within 12 hours; calculated for a sea temperature of 5°C and air temperature of 0°C.

In the calculations the specific heating capacity must be set at 3.44 kJ/kg/°C, which is typical value for a 50% mixture of oil and water.

It must be possible to use the entire capacity of the heat source in a random combination maximum of 3 tanks.

2.1.4.2 Tank heating systems

The choice of heating systems must be adapted to the various tank systems.

A heat source must be positioned close to the tank's suction line.

2.1.4.3 Steam nozzles

If steam nozzles are used, the aim must be to avoid entering tanks that contain hazardous products.

Where possible, heating systems, where the nozzles are fitted from the outside of the tank or a solution with permanent heating must be chosen.

2.1.5 ORO tank ventilation

Tank ventilation in accordance with class requirement must be permanently installed.

2.1.6 ORO tank access and inspection

It must be possible to access all ORO tanks from the deck via manholes with standard dimension: 600x800mm. Manholes must be on open decks or in the cargo rail, not in closed rooms in the cargo rail.

All ORO tanks, with the exception of methanol and special product tanks, must be equipped with an ullage hatch to ease inspection and gauging. The ullage hatch must have a minimum dimension of ND 150.

2.2 Discharge and loading system

2.2.1 System presentation in ORO mode

It must be possible to present the ORO system in a separate module (separate screen) in the IAS system.

2.2.2 Discharge system / circulation of tank volume

Each tank must be equipped with a discharge pump with the capacities described in section 2.2.3 choice of pumps. The pump may be submersed in the tank or connected to the tank using a short suction pipe. If the pressure drop on the suction side is less than 0.5 bar when discharging 3 000 cSt oil, the same pump may serve two closely located tanks.

The pipe system must enable circulation of the volume in individual tanks without having to interrupt loading / discharging of other tanks.

For preparation of the ORO pipe system, all orifices to be closed / opened must have a blind flange valve.

The vessels can be set up to accommodate a combined pump and pipe system for use in ORO and loading / discharge systems.

Heat tracing on the suction side and from the manifold to the ORO tanks should be considered.

Blind flange valves must be marked whether they must be open / closed in ORO mode. Blind flange valves must be easily accessible, signal coloured and stand in a crib close to the blind flange. Departures from the use of a blind flange valve must be approved by NOFO.

2.2.3 Discharge capacity

The vessel's discharge system (pumps / pipes) must satisfy the following total delivery capacity requirements for withdrawal on deck

Min 500 m³ per hour to 3 bar at 3 000 cSt viscosity and

Min 300 m³ per hour to 7 bar at 3 000 cSt viscosity,

The discharge capacity must be substantiated using theoretical calculations that take into consideration pressure loss in the pipe system at deck level and are based on the documented capacities of the pumps. It must be possible to achieve the discharge rate during simultaneous discharge of no more than half of the tanks.

It must be possible to demonstrate the discharge capacity through physical tests.

2.2.4 Choice of pumps

The pumps used must be screw pumps or another type of pump with documented suitability for oils / emulsions. No single pump must have a capacity of less than 100 m³ per hour.

Exception: Individual tanks less than 100 m³ may use dedicated pumps with a capacity of 75 m³ per hour (Example: methanol tanks).

NPSHr must be at least 0.5 bar for pumps that are not submersed in the tanks. All capacity numbers for pumps must be documented up to minimum 3.000 cSt.

2.2.5 Discharge / loading manifold on deck

The loading and discharge pipes to / from the tanks must be connected to a manifold, approx, 15m from the vessel's stern on the starboard side. The manifold is to be positioned on the main deck so that there are no sharp bends in the connected hoses and so that they are not exposed to wear against the vessel's other installations.

Vessels with a platform for the oil recovery system that is level with the top of the cargo rail must ensure that there is room for connection of the loading hose and that there are no sharp bends in the hose down towards the main deck.

The manifold and pipe system must allow for loading at the same time as separated seawater is pumped overboard. Preferably, there must be a permanent pipe on the side of the vessel in order to pump separated seawater overboard. A flexible hose may be accepted.

Hoses must be supplemented from the vessel.

The connections must be of type:

6" Weco union female connection, wp 1 000/69 psi/bar.

A drip tray must be fitted under the manifold and ORO filter with drainage.

2.2.6 Valves

Preferably, it must be possible to switch between the tanks during loading / discharging using remotely operated valves.

2.2.7 Filter system (drawing no. 007)

The vessel's loading line must be equipped with a permanently fitted, double filter system. The dimensions of the filter must be tailored to the tolerance of the vessel's discharge pumps in order to minimize the likelihood of damage / shutdown. The filter housing should be equipped with a quick-opening lock to enable quick cleaning of the filter.

The filter capacity per filter must be a minimum of 700 m³ per hour.

The filters must be positioned on the outside main deck and be easily accessible.

2.2.8 Proposed Transrec platform (drawing no. 007)

This is a minimum solution for platforms that must have a platform.

2.3 Deck layout (drawing no. 001 – 002)

2.3.1 Transverse rail astern (drawing no. 004)

It must be possible to open the gate easily on vessels that have a transverse rail astern. The minimum opening is a width of 7.0 m and a height of 2.5 m for launching / recovery of the oil booms over the stern.

The transition between the stern and the deck and any remaining rail must be rounded with a minimum radius of 250 mm.

The gate astern must be hinged and easy to open / close hydraulically and be secured with toggles.

It must be possible to operate the oil boom without it being in contact with sharp objects / edges.

2.3.2 Oil recovery equipment anchoring points

The vessels must have permanent anchoring points for the oil recovery equipment. When positioning the oil recovery equipment, there must be at least a gap of 600 mm between the vessel's installations and the revolving skimmer and booms (refer to drawings 002 and 004). If container anchoring points on the deck are exposed to knocks and external strain, these should be covered when not in use.

The following must be anchored using 20 foot container anchoring points:

- Oil boom drum 1 and 2
- Oil skimmer crane
- Equipment container
- Workshop container
- Washing container

2.3.2.1 Dimensioning the deck anchoring points

2.3.2.1.1 Oil skimmer crane

Deck anchoring points must be dimensioned in accordance with regulatory requirements and approved by a classification society.

Parameters: Crane arm 7.5 m, SWL 3 tonnes, significant wave height 6 m, maximum wave height 8 m, North Sea conditions.

2.3.2.1.2 Oil boom drum

The oil boom anchoring point must be dimensioned according to the maximum pull during launching of 14 tonnes (refer to drawing 006).

2.3.2.2 Testing the deck anchoring point for the oil skimmer crane

Deck anchoring points for the oil skimmer crane must be tested and tolerate a static and dynamic load where relative movements that will occur between the crane and the skimmer have been taken into consideration.

2.3.3 Positioning the skimmer

The rail astern on the starboard side and possibly the stern must not have a height or a cover that obstructs the oil skimmer crane operator's view. If the rail is higher than 2.5 m, a platform must be built on which the skimmer is positioned and can be operated. The platform must be built around the whole of the oil skimmer crane so that the operator may work with the equipment safely from all sides. The platform must be permanently installed.

The platform must be designed so that oil spills drain through (e.g., using a grating). There must be a 1m high railing around the platform.

2.3.4 Response time requirement

The vessel must be ready for ORO operation within 2 hours after the ORO tanks have been emptied.

The total time for preparing the deck area for receiving the oil recovery equipment must not exceed 1 hour. The vessel's crew must be able to carry out the work.

2.4 Towing boom system (drawing no. 001)

2.4.1 Anchoring point for the towing boom

There must be a puller and capstan for pulling in the towing booms astern on the starboard side of the main deck, the puller must be approx. 10 - 15 metres in front of the stern.

2.4.2 Towropes abeam

The vessel's tugger winch on the starboard side is used for handling the towropes abeam.

The vessel must have a centre pivot and mooring pipe on the starboard side approx. 30 m from the stern for a towrope abeam. The anchoring point must be positioned so that there is no wear on the wire during operation of the towropes.

- Winch pull: 10 tonnes
- Towrope length: 300 m
- Tow wire: fibre material, SWL 10 tonnes, safety factor 3, net weight max. 25 kg / 100 m

2.5 Cabin capacity

The vessel must have at least 10 berths for NOFO's oil spill response personnel.

3 SUPPLY TO OIL RECOVERY EQUIPMENT (drawing no. 009)

Operation of NOFO's oil recovery equipment requires that vessel supplies the following:

3.1 Electric power supply

Power supply outlets for the oil recovery equipment must be installed in a cabinet with air tightness class IP 66 or better. The cabinet should be made from rustproof material and be located in a protected area. The cabinet must be marked with "NOFO" and must contain the following outlets:

At the rear of the deckhouse:

- 2 x CEAG Outlet 1 -- phase 16A/230v Eex-ed (Blue) - GHG 5114306 R 0001
- 2 x CEAG Outlet 3 – phase 32A/440 Eex-ed (Red) - GHG 5124406 R 0001

Port astern in the cargo rail:

- 2 x CEAG Outlet 1 - phase 16A/230v Eex-ed (Blue) - GHG 5114306 R 0001

Starboard aft in the cargo rail:

- 2 x CEAG Outlet 1 - phase 16A/230v Eex-ed (Blue) - GHG 5114306 R 0001

3.2 Air supply

3.2.1 Air for power tools

Air outlet for power tools / equipment must be located in the area where such tools may be used in connection with mobilization / demobilization of oil recovery equipment onboard.

There must be at least one outlet at the rear of the accommodation on the main deck and one starboard aft in the cargo rail.

3.2.2 Air supply to boom

3.2.2.1 Air connections

The compressed air system on deck must be able to supply at least 6 bar and 5 m³/min

- 1 x quick snap Type Hansen connection (female) ½ inch
- 2 x Type Camlock connection (female) 1½ inch
- 1 x connection for power tools (claw coupling)

All connections must have a shut off valve and be installed close to the oil boom winch on the port side aft.

3.2.2.2 Reserve capacities

There must be 100% reserve capacity in the compressed air supply from the vessel.

Example: The compressed air system on deck must be supplied from two independent sources each with a capacity of 100% of the minimum required capacity.

3.3 Steam and water supply

3.3.1 Water outlet

The water outlet must be located at the rear of the deckhouse. This has the following capacity and connections:

- 1" claw coupling, European standard
- Water capacity: min. 1500 l per hour

3.3.2 Hydro jet

A jet water washer must be installed outside the Ex-zone. A jet water outlet must be available in the area where the oil boom drum has been installed.

- Outlet connection ERGO coupling (female) $\frac{3}{8}$ inch
- Minimum pressure 200 bar
- Capacity 1200 l per hour
- Min. temperature 85°C
- Lance with 25 m hose

3.3.3 Steam outlet

The steam outlet must be located close to the jet water outlet.

- 1" outlet from certified steam valve
- Pressure 5 bar
- Temperature 140°C
- Lance with 1" steam hose with a length of 25m inc. certificate

3.4 Hydraulic power (drawing no. 008 and no. 009)

3.4.1 Hydraulic power outlet

Hydraulic power outlets from the vessel's system, 2 x high pressure, 2 x return and 2 x drainage, must be located on the starboard side, approx. 10m from the vessel's stern post.

Pressure gauge/manometer must be installed at the outlet.

A temperature alarm must be installed on the return line at HPU.

3.4.2 Capacity

In case of withdrawals on deck, the following two alternatives must be satisfied for operation of the oil recovery equipment:

- 295 litres per minute at 280 bar
- 390 litres per minute at 240 bar

3.4.3 Reserve capacity

The system must have at least a reserve capacity of 50%

Example: If the total capacity is supplied by two pumps, there must be a third pump that supplies 50% of the total capacity

3.4.4 Hydraulic couplings

All hydraulic couplings on board must be acid-proof female couplings.

The high pressure line must have a shut-off valve and be divided into two outlets with the following 1¼" couplings:

- Snap Tite S71-3C16-20RP with sleeve lock

The return line must be divided into two outlets with the following 1½" couplings:

- Tema - Flat face FF10010 - 150 RV

The drainage line must be divided into two outlets with the following ½" couplings:

- Tema 5010 RV

3.4.5 Hydraulic oil quality

A double filter with a by-pass designed for maximum flow must be installed at the outlet on deck.

Filter quality NAS Class 6 or better. To be tested annually by submitting the test results to NOFO.

4 MISCELLANEOUS

4.1 Log

The vessel must be equipped with a log to measure the relative speed between the water and the vessel.

4.2 Pilothouse – cable duct

The pilothouse must have at least a 3" cable duct from the external down-link antenna.

4.3 Detection of oil on the sea

The vessel must have an oil detection system permanently installed that gives automatic oil detection. The radar must be able to present area and position determination, operating history and also an estimation of operating speed and direction. The system must also give information about wind conditions.

The supplier of the vessel's oil detection system must be consulted to ensure that the vessel's X-band radar will function well in the system or a separate X-band radar must be installed.

4.4 Infrared camera

If the vessel is equipped with an infrared camera, this must be located on the pilothouse roof, starboard side.

4.5 Securing against falling overboard

When gates are open, there must adequate (temporary) securing against falling overboard.

4.6 Lighting on deck

The area around the entire oil skimmer and oil boom drum must have good working light (minimum 100 lux) in Eex design. The lighting aft may be temporarily rigged.

4.7 Alarms afterdeck

It must be possible to hear the vessel's general alarm on the afterdeck with minimum 75dB(A)

4.8 MOB boat

The vessel must be equipped with an MOB boat, suspended in davits on the port side

5 APPROVAL

5.1 Design drawings

The following drawings must be sent both electronically (AutoCad) and as a hardcopy (one copy) to NOFO for approval:

- Deck lighting plan
- Tank Plan
- Oil recovery system, Piping diagram
- Main deck arr. for Oil Recovery Equipment
- Hydraulic piping diagram
- Stern gate

Drawings or attachments must contain information about:

- Number and size of OR tanks
- Hydraulic pump capacities
- Capacity, pressure and NPSH for OR pumps
- Heat capacity calculations for tank heating in ORO tanks
- Capacity calculations for the discharge system, including the calculation of pressure loss in the pipe system
- Orifice plates and valve arrangement in OR system
- Deck anchoring points for NOFO equipment, including strength calculations
- Location of hydraulic, loading / discharge line couplings and electric power outlets
- Design of the deck layout. This will require time during preparation for mobilization (stern gate, skimmer platform, etc.).

5.2 The approval process

5.2.1 The process matrix

| Milestones | Action | | | | | | | | | | | |
|---|-------------|------------------------------|-----------------------|---|--|--------------------------------------|---|---------------------------------|-----------------------------------|--|------------------------|------------------------------|
| | Responsible | Assess against NOFO standard | Include NOFO standard | NOFO confirmation of receipt of drawings/return checklist | NOFO approval of drawings - (max 2 months) | Two months before delivery of vessel | NOFO sends any comments of adjustment, within 14 days | Minimum 30 days before delivery | Minimum two weeks before delivery | After completion of initial verification | Depending of shipowner | After approved NOFO exercise |
| 1 Initial draft of vessel specifications /Vessel Tender | O | X | | | | | | | | | | |
| 2 Design review / NOFO layout of designs / NOFO's office | S | X | | | | | | | | | | |
| 3 Contract - Ship designer/Shipowner - Yard | R | X | | | | | | | | | | |
| 4 Final vessel specification / Contract Shipowner - Yard | RSV | X | X | | | | | | | | | |
| 5 Submit drawings from ship designer / Yard for NOFO approval | SVN | | | X | | | | | | | | |
| 6 Reply to comments from NOFO | SV | | | | X | | | | | | | |
| 7 Submit revised drawings to NOFO | SV | | | | | X | X | | | | | |
| 8 Yard returns complete checklist and photos to NOFO | V | | | | | | | X | | | | |
| 9 Yard confirms any adjustments have been taken care of | V | | | | | | | | X | | | |
| 10 ORO classification approval on-site, NOFO invited. | V | | | | | | | | X | | | |
| 11 NOFO issues temporary certificate (pending exercise) | N | | | | | | | | | X | | |
| 12 Classifications society is informed about exercise | R | | | | | | | | | | X | |
| 13 Vessel takes part in exercise with NOFO equipment on board (NOFO base) | R | | | | | | | | | | X | |
| 14 ORO classification notation is sent to NOFO, when this is received | VR | | | | | | | | | | X | |
| NOFO standard certificate is issued | N | | | | | | | | | | | X |

Operating co. = O
 Shipowner = R
 Yard = V
 Ship designer = S
 NOFO = N

5.2.2 Contact points

NOFO must have formal contact with the owner of the vessel during the construction period. If the vessel is to join the NOFO pool, the operating company will receive copies of the applicable correspondence between all parties.

5.2.3 Approval following delivery to NOFO base

After delivery, a NOFO representative must give final acceptance of the vessel.

5.3 Capacity tests

Before final acceptance as an "Oil Recovery Vessel according to the NOFO Standard", the vessel must be inspected and capacity tests must be carried out on hydraulic and discharge pumps at one of NOFO's oil spill response bases.

In a few cases, it will also be possible to conduct tests by discharging oil / emulsion. In such tests, the vessel must be able to demonstrate and meet the discharge capacity specified in this standard.

5.4 Certificate

The certificate is issued to the ship owner and is valid for three years, or as long as the vessel is part of NOFO's standby fleet. Vessels that have been out of the NOFO fleet for more than three years. Must be re-inspected and re-approved before they can be used in NOFO's standby fleet.

6 Drawings

- NOFO 001 - Main deck – equipment plan
- NOFO 002 – Main deck – layout
- NOFO 003 - Oil skimmer crane – clearance to cargo rail
- NOFO 004 - Clearances and rounded stern
- NOFO 005 – Oil skimmer crane
- NOFO 006 - Deck fastening points
- NOFO 007 - Filter unit /Transrec platform – principle drawing
- NOFO 008 - Hydraulic diagram
- NOFO 009 - Supply to oil recovery equipment

















