


EUROPEAN OFFSHORE WIND DEPLOYMENT CENTRE

Blackdog Firing Range Management Plan

*Submitted for approval pursuant to the discharge of Section 36
Consent Condition 10.*

ABE-ENV-DB-0013

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1	04/05/2017	First issue
2	17/07/2017	Post-consultation and Removal of Cable Landfall Option 2
3	23/08/2017	Change of the MOD Contact Details

Blackdog Firing Range Management Plan Overview

Purpose and objectives of the Plan

This Blackdog Firing Range Management Plan (FRMP) has been prepared to address the specific requirements of the relevant condition attached to the Section 36 Consent (S.36) issued to Aberdeen Offshore Wind Farm Limited (AOWFL).

The overall aim of this FRMP is to set out the operational procedures to ensure the safety of vessels, installations and personnel with regards to the firing range in the vicinity of the development, and to ensure activities undertaken at the firing range are not compromised.

This FRMP confirms that the operational procedures employed align with those considered in the original Application, and that firing range-related mitigation measures detailed in the Application will be applied during installation.

All relevant method statements developed by contractors involved in the European Offshore Wind Deployment Centre (EOWDC) will comply with the procedures set out in this FRMP.

Scope of the Plan

This FRMP covers, in line with the requirements of the S.36 Consent condition, the following:

- Information to demonstrate safety of vessels, installations and personnel deployed within the offshore danger area (X5703);
- Information to demonstrate that range activities will not be compromised;
- Operational procedures requiring to be implemented by AOWFL;
- Details on the costs attributable to the delivery of the Management Plan;
- Confirmation that AOWFL will comply with all operational procedures under the Management Plan; and
- Confirmation that the construction methods described within this FRMP align with those considered in the Environmental Statement (ES), Supplementary Environmental Information Statement (SEIS), Marine Licence, S.36 Consent and Marine Licence Application.

Structure of the Plan

This FRMP is structured as follows:

Sections 1 and 2 set out the scope and objectives of the FRMP and set out statements of compliance.

Section 3 sets out the process for making updates and amendments to this document.

Section 4 provides an overview of the Development.

Section 5 provides detail on Blackdog Firing Range.

Section 6 details the vessel procedures.

Section 7 outlines the roles and responsibilities.

Section 8 presents the Emergency Response Procedures.

Section 9 outlines the financial responsibility for the delivery of this FRMP.

Section 10 provides information to demonstrate compliance with the original Application, and how the mitigation proposed in the Application will be delivered.

Section 11 provides a reference list for documents cited within the Plan.

Appendix A details the ES and SEIS commitments relevant to this FRMP

Plan Audience

This FRMP is intended to be referred to by relevant personnel involved in the construction and operation of the EOWDC, including AOWFL personnel, Contractors and Subcontractors. Compliance with this FRMP will be monitored by AOWFL and reported to the Marine Scotland Licensing and Operations Team.

Plan Locations

Copies of this FRMP are to be held in the following locations:

- At AOWFL Head Office;
- At the premises of any agent, Contractor or Subcontractor (as appropriate) acting on behalf of AOWFL;
- At the AOWFL Marine Coordination Centre; and
- With the Ecological Clerk of Works.

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LIST OF ABBREVIATIONS AND DEFINITIONS

Defined Terms

Term	Definition / Description
the 2010 Act	The Marine (Scotland) Act 2010.
Adverse Weather	Weather conditions which exceed the limits as defined in the Employer's Requirements of the contracts.
Application	The Application and Environmental Statement submitted to the Scottish Ministers, by the Company on 1st August 2011 and Supplementary Environmental Information Statement submitted to the Scottish Ministers by the Company on 6th August 2012 for consent under section 36 of the Electricity Act 1989 and for a Marine Licence under 20(1) of the Marine (Scotland) Act 2010, for the construction and operation of the European Offshore Wind Deployment Centre (EOWDC) electricity generating station approximately 2 km off the coast of Aberdeenshire in Aberdeen Bay with a generation capacity of up to 100 MW.
Blackdog Firing Range Management Plan (FRMP)	The Management Plan required to be submitted for approval under Condition 10 of the section 36 Consent.
Commencement of the Development	The date on which the first vessel arrives on the Site of European Offshore Wind Deployment Centre to begin construction in accordance with the section 36 Consent.
Company	Aberdeen Offshore Wind Farm Limited (AOWFL). AOWFL is wholly owned by Vattenfall and has been established to develop, finance, construct, operate, maintain and decommission the European Offshore Wind Deployment Centre.
Consent Plans	The plans, programmes or strategies required to be approved by the Scottish Ministers (in consultation with the appropriate stakeholders) in order to discharge conditions attached to the Offshore Consents.
Construction	As defined by the Section 36 Consent, (as per section 64(1) of the Electricity Act 1989, read with section 104 of the Energy Act 2004), construction is defined as follows: “construct”, in relation to an installation or an electric line or in relation to a generating station so far as it is to comprise renewable energy installations, includes: <ul style="list-style-type: none"> • placing it in or upon the bed of any waters; • attaching it to the bed of any waters; • assembling it; • commissioning it; and • installing it.
Construction Method Statement (CMS)	The Statement to be submitted for approval under Condition 13 of the section 36 Consent.
Contractor	Any Contractor/Supplier (individual or firm) working on the project, hired by AOWFL.
Design Statement	The Statement to be submitted for approval under Condition 14 of the section 36 Consent.

Term	Definition / Description
Development	The European Offshore Wind Deployment Centre electricity generating station in Aberdeen Bay, approximately 2 km east of Blackdog, Aberdeenshire, as described in Annex 1 of the section 36 Consent.
Development Area	The area which includes the wind turbine generators, the Inter-array cables and part of the Offshore Export Cable Corridor, including any other works, as shown in Part 4 of the Marine Licence (named as Lease Boundary in the Marine Licence).
Electricity Act	the Electricity Act 1989 (as amended).
ES	The Statement submitted by the Company on 1 August 2011 as part of the Application.
Inter-array cables	Electricity cables connecting the WTGs.
Licensing Authority	Scottish Ministers, as defined by the Marine Licence. It is important to note that Marine Scotland is acting on behalf of Scottish Ministers.
Marine Licence	Licence issued by the Scottish Ministers under Part 4 of the Marine (Scotland) Act 2010 for construction works and deposits of substances or objects in the Scottish Marine Area in relation to the Offshore Wind Farm and Offshore Export Cable.
Navigational Safety Plan (NSP)	The Plan to be submitted for approval under Condition 26 of the section 36 Consent.
Offshore Consents	<ul style="list-style-type: none"> • Consent granted under section 36 of the Electricity Act 1989 for the construction and operation of the EOWDC; • Declarations granted under section 36A of the Electricity Act 1989 to extinguish public rights of navigation so far as they pass through those places within the territorial sea where structures forming part of the Offshore Wind Farm are to be located; and • Marine Licence under Part 4 of the Marine (Scotland) Act 2010 for construction works and deposits of substances or objects in the Scottish Marine Area in relation to the Offshore Wind Farm and Export Cable Corridor.
Offshore Danger Area (ODA)	The seaward extent of the Blackdog Firing Range (X5703), as depicted on Practise and Exercise Area (PEXA) Admiralty Chart Q.6405 published by the UK Hydrographic Office.
Offshore Export Cables (OECs)	The offshore export cables (and all associated cable protections) connecting the WTGs to the onshore export cables.
Offshore Export Cable Corridor (OECC)	The consented area within which the offshore export cables will be laid up to MHWS.
Offshore wind farm	An offshore generating station which includes proposed WTGs, inter-array cables, meteorological masts and other associated and ancillary elements and works (such as metocean buoys). This includes all permanent and temporary works required.
Onshore Export Cables	The cables connecting the offshore export cables from the landfall to the onshore substation.
Scottish Marine Area	The area of sea within the seaward limits of the territorial sea of the United Kingdom adjacent to Scotland and includes the bed and subsoil of the sea within that area.
Section 36 Consent	Consent granted under section 36 of the Electricity Act 1989 for the construction and operation of the EOWDC.

Term	Definition / Description
Supplementary Environmental Information Statement (SEIS)	The Statement (Addendum) submitted to the Scottish Ministers by the Company on 6 th August 2012 as part of the Application.
Sentries	Military personnel stationed to keep guard or to control access to the ODA both onshore and offshore.
Vessel Management Plan	The Plan to be submitted for approval under Condition 24 of the Section 36 Consent.

Acronym Definitions

Term	Definition
AIS	Automatic Identification System
AOWFL	Aberdeen Offshore Wind Farm Limited
BEIS	Department for Business, Energy, and Industrial Strategy
CMS	Construction Method Statement
COLREGS	International Regulations for Preventing Collisions at Sea
DIO	Defence Infrastructure Organisation
DS	Design Statement
DZ	Danger Zone
EOWDC	European Offshore Wind Deployment Centre
ERCoP	Emergency Response Cooperation Plan
ERP	Emergency Response Plan
ES	Environmental Statement
FLiDAR	Floating Light Detection and Ranging
FRMP	Firing Range Management Plan
HLV	Heavy Lift Vessel
HSSE	Health, Safety, Security and Environment
km	Kilometre
MC	Marine Coordinator
MCA	Maritime and Coastguard Agency
MOD	Ministry of Defence
m	Metres

Term	Definition
NLB	Northern Lighthouse Board
nm	Nautical Mile
NMP	Navigational Marking Plan
NSP	Navigational Safety Plan
ODA	Offshore Danger Area
OEC	Offshore Export Cable
OECC	Offshore Export Cable Corridor
OEMP	Offshore Environmental Management Plan
SEIS	Supplementary Environmental Information Statement
SOLAS	Safety of Life at Sea
UKHO	United Kingdom Hydrographic Office
VMP	Vessel Management Plan
WTG	Wind Turbine Generator

1 INTRODUCTION

1.1 Background

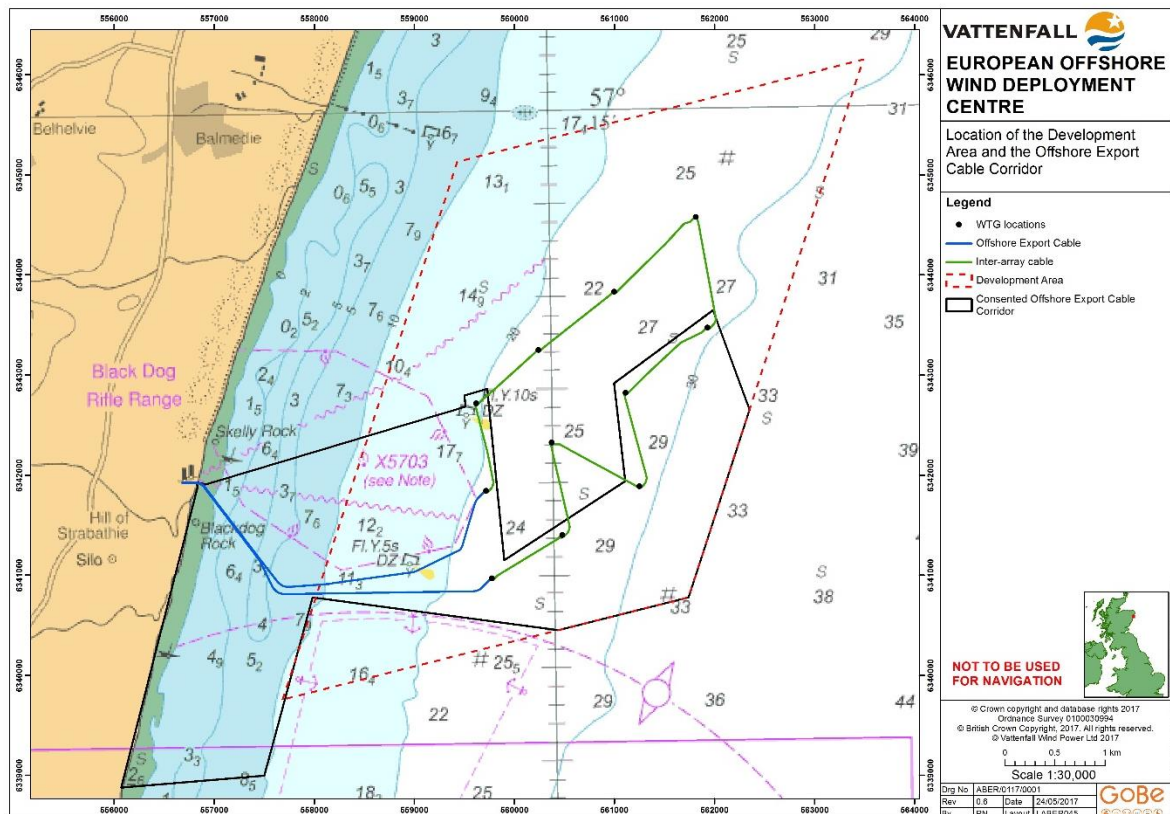
On 26 March 2013, Aberdeen Offshore Wind Farm Limited (AOWFL) received consent from the Scottish Ministers under Section 36 (S.36) of the Electricity Act 1989 for the construction and operation of the European Offshore Wind Deployment Centre (EOWDC - also known as the Aberdeen Offshore Wind Farm) and on 15 August 2014 a Marine Licence was attained under section 25 of the Marine (Scotland) Act 2010 (reference 04309/16/0). This Marine Licence was most recently varied on 30 September 2016 (reference 04309/16/1).

The Development is located approximately 2 to 4.5 kilometres (km) offshore to the north east of Aberdeen, Scotland, within Aberdeen Bay. The Offshore Export Cables (OECs) will each be between 3.7 – 4.4 km long (maximum total length ~8 km) and will reach landfall at the adjacent coastline in Aberdeen Bay, at Blackdog (Figure 1).

A further overview of the Development is contained in *Section 4* of this document.

AOWFL is a company wholly owned by Vattenfall and was established to develop, finance, construct, operate, maintain, and decommission the EOWDC.

Figure 1 – Location of the Development Area and the Offshore Export Cable Corridor (OECC)



1.2 Objectives of this Document

The S.36 Consent and Marine Licence contain a number of conditions that must be discharged through approval by the Scottish Ministers/Licensing Authority prior to the commencement of any offshore construction works. One such requirement is the approval of a Blackdog Firing Range Management Plan (FRMP). The main purpose of this condition is to ensure activities at the Firing Range are not disturbed or compromised, and to ensure the safety of all vessels, crew, and personnel. This document therefore provides relevant procedures to be followed during both the construction and operational phases of the Development.

The relevant conditions setting out the requirement for a FRMP, that are to be discharged by this document, are presented in full in Table 1.

Table 1 – Consent conditions to be discharged by the FRMP

Consent Document	Condition Reference	Condition Text	Where Addressed
S.36 Consent	Condition 10	Prior to the erection of any wind turbines on the Site, the Company must submit a Blackdog Firing Range Management Plan ("Management Plan") to the Scottish Ministers for their written approval, following consultation by the Scottish Ministers with the Ministry of Defence (MOD).	This document sets out the FRMP for approval by the Scottish Ministers. The MOD has been consulted on the contents of this plan and consultation with the MOD will also be undertaken by Scottish Ministers.
		To ensure that the safety of vessels, installations and personnel deployed within the offshore danger area (X5703) whilst range activities are not compromised the Management Plan must identify the operational procedures requiring to be implemented by the Company.	Section 6, 7 & 8
		The Company must meet all costs attributable to the delivery of the Management Plan.	Section 9
		The Company must comply with all operational procedures under the Management Plan.	Section 2
	Reason	To ensure that Blackdog Firing Range activities are not compromised.	

1.3 Linkages with other Consent Plans

This FRMP sets out the procedures to ensure activities at the Firing Range are not disturbed or compromised, and to ensure the safety of all vessels, crew, and personnel. Ultimately, however, it will form part of a suite of approved documents that will provide the framework for the construction and operation processes – namely the other Consent Plans required under the S.36 Consent and the Marine Licence:

- The Vessel Management Plan (VMP) (EOWDC Document reference: ABE-ENV-BD-0006) (required under Condition 24 of the S.36 Consent);
- The Offshore Environmental Management Plan (OEMP) (EOWDC Document reference: ABE-ENV-DB-0012) (required under Condition 17 of the S.36 Consent);
- The Construction Method Statement (CMS) (EOWDC Document reference: ABE-ENV-DB-0014) (required under Condition 13 of the S.36 Consent);
- The Design Statement (DS) (EOWDC Document reference: ABE-ENV-BD-0017) (required under Condition 14 of the S.36 Consent); and
- The Navigational Safety Plan (NSP) (EOWDC Document reference: ABE-ENV-QB-0008) (required under Condition 26 of the S.36 Consent).

The FRMP will be submitted for approval by the Scottish Ministers and consistency between the Consent Plans will be achieved by ensuring that all relevant documents are consistent with the terms of any previously submitted or approved documents.

1.4 Structure of this FRMP

In response to the specific requirements of the S.36 Consent conditions, this FRMP has been structured so as to be clear that each part of the specific requirements have been met and that the relevant information to allow the Scottish ministers to approve the FRMP has been provided. The document structure is set out in Table 2.

Table 2 – FRMP document structure

Section		Summary of Content
1	Introduction	Background to consent requirements and overview of the FRMP scope and structure, and identifies those other Consent Plans relevant to the FRMP and provides a statement of consistency between this FRMP and those plans.
2	Statements of Compliance	Sets out the AOWFL statements of compliance in relation to the FRMP and the broader construction process.
3	Updates and amendments to this FRMP	Sets out the procedures for any required updating to or amending of the approved FRMP and subsequent further approval by the Scottish Ministers.
4	Development Overview	Provides an overview of the Development.
5	Blackdog Firing Range	Provides detail on Blackdog Firing Range.

Section		Summary of Content
6	Vessel Procedures	Provides detail on Vessel Safety Measures
7	Roles and Responsibilities	Outlines the safety measures to be taken by the Marine Coordinator and other relevant roles.
8	Emergency Response Procedures	Provides an overview of the response procedures in case of an emergency.
9	Costs	Outlines the financial responsibility for the delivery of this FRMP.
10	Compliance with the Application and SEIS	Sets out how the mitigation measures related to construction and operation identified in the ES are to be delivered (by reference to this FRMP or other relevant consent plans).
11	References	Lists the documents cited within the Plan
Appendix A	Compliance with Mitigation Measures	Details the ES and SEIS commitments relevant to this FRMP.

2 STATEMENTS OF COMPLIANCE

2.1 Introduction

The following statements are intended to reaffirm the AOWFL commitment to ensuring that the Development is constructed and operated in such a manner as to meet the relevant requirements set out by the Offshore Consents, as well as other broader legislative requirements.

2.2 Statements of Compliance

AOWFL, in undertaking the construction and operation of the EOWDC, will ensure compliance with this FRMP as approved by the Scottish Ministers (and as updated or amended from time to time following the procedure set out in *Section 3* of this FRMP).

AOWFL, in undertaking the construction and operation of the EOWDC, will ensure compliance with other relevant Consent Plans, as approved by the Scottish Ministers, and as identified in *Section 1.3* above.

AOWFL, in undertaking the construction and operation of the EOWDC, will ensure compliance with the limits defined by the original application and the project description defined in the Environmental Statement (ES) and Supplementary Environmental Information Statement (SEIS) and referred to in Annex 1 of the S.36 Consent in so far as they apply to this FRMP (unless otherwise approved in advance by the Scottish Ministers / the Licensing Authority).

AOWFL, in undertaking the construction and operation of the EOWDC, will comply with AOWFL Health, Safety, Security and Environment (HSSE) systems and standards, the relevant HSSE legislation and such other relevant legislation and guidance so as to protect the safety of construction personnel and other third parties.

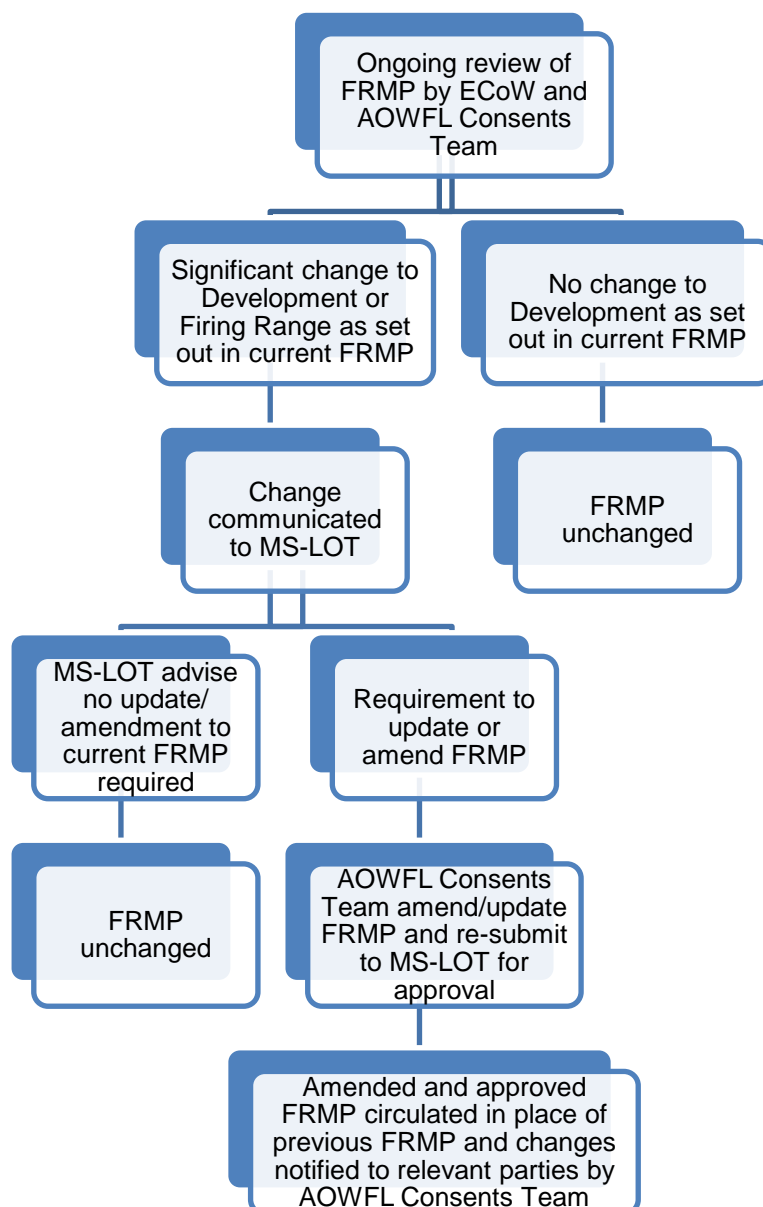
AOWFL will, in undertaking the construction and operation of the EOWDC, ensure compliance with all other relevant legislation and require that all necessary licences and permissions are obtained by the Contractors and Subcontractors through condition of contract and by an appropriate auditing process.

3 UPDATES AND AMENDMENTS TO THIS FIRING RANGE MANAGEMENT PLAN

This FRMP sets out relevant procedures to be followed during both the construction and operational phases of the Development to ensure activities at the Firing Range are not disturbed or compromised, and to ensure the safety of all vessels, crew, and personnel.

Where it is necessary to update this FRMP in the light of any significant new information related to the Development or Firing Range, AOWFL proposes to use the change management process set out in Figure 2; identifying such information, communicating such change to the Scottish Ministers, redrafting the FRMP if required, seeking further approval for the necessary amendments or updates and disseminating the approved changes/amendments to responsible parties.

Figure 2 – FRMP Change Management Procedure



4 DEVELOPMENT OVERVIEW

4.1 Introduction

This section provides a brief overview of the EOWDC relevant to the FRMP. Figure 1 shows the location of the Development in Aberdeen Bay.

4.2 Development Overview

The Development will consist of the following main components:

- 11 Wind Turbine Generators (WTGs);
- Three legged jacket substructures each installed on suction bucket foundations;
- A network of circa 9.7 km of Inter-array cables; and
- Two buried or mechanically protected, subsea OECs, totalling up to ~8 km in length, to transmit the electricity from the Wind Turbine Generators (WTGs) to the cable landfall location at Blackdog, within Aberdeen Bay, and connecting to the onshore cables for transmission to the onshore substation and connection to the National Grid network.

Further details of the Development layout and design will be set out, for approval, in the Design Statement (ABE-ENV-BD-0017).

5 BLACKDOG FIRING RANGE

5.1 Blackdog Firing Range Overview

The Blackdog Firing Range (“*Firing Range*”) is located approximately eight kilometres north of Aberdeen harbour, with an Offshore Danger Area (ODA) marked on Admiralty Charts. Management of the Firing Range falls under the responsibility of the Defence Infrastructure Organisation (DIO), a function of the MOD.

The Firing Range is available for use between 0900 and 1600 Monday through Saturday and between 0900 and 1330 on Sundays, however longer weekend exercises are sometimes undertaken. As well as use by the MOD, local gun clubs also have access to the range; by pre agreement with the MOD. It is considered that all communication with regards to the Firing Range will be through the DIO contact listed within this report (see *Section 7.2*).

5.2 Blackdog Firing Range Operation

A navigational safety note on Admiralty Charts states of the Firing Range that “*No restrictions are placed on the right to transit the firing practice areas at any time. The firing practice areas are operated under a clear range procedure: exercises and firing only take place when the areas are considered clear of all shipping.*” AOWFL acknowledges that while this procedure applies under normal circumstances, the construction and operation of the Development falls out with normal circumstances, and that the onus is on AOWFL to minimise disturbance to activities occurring at the Firing Range, as per the Condition 10 of the S.36 Consent.

The Pilot Book (UKHO 2016) for the area also states that “*Red flags and occasionally red lights are displayed from flagstaffs on the shore when firing is taking place*”. It puts no obligation on third party vessel actions within the ODA, however as with the charted navigational safety note above, AOWFL acknowledges the construction and operation of the Development falls out with normal circumstance. Therefore the lights and flags can be used as an additional source of information as to the daily status of the Firing Range.

On shore, two Sentries¹ are stationed at the boundary of the Firing Range. They are positioned to monitor vessel movements within or near the ODA. If the Sentries observe a vessel approaching the ODA and/or the Danger Zone (DZ) buoys, they will immediately issue a cease fire call to all range users until the vessel is passed and clear. It is noted that the sentries judge vessel positions via a visual watch only, as the Firing Range has no Radar facilities.

5.3 Development Relative to the Blackdog Firing Range

The Development layout is presented relative to the Blackdog Firing Range ODA in Figure 3. As shown in the figure, no structures or cables associated with AOWFL will be installed within the ODA.

¹ Military personnel stationed to keep guard or to control access to the ODA both onshore and offshore.

While the current positions of the Wind Turbine Generators (WTGs) all lie out with the ODA, two of the WTGs are within 500 metres (m) of the boundary (AWF01 and AWF05 as shown in Figure 3). Of these, only the installation of AWF05 is expected to require vessel entry into the ODA during the construction phase. During these stages, an anchor will be laid within the ODA, which will take approximately half a day. It is currently anticipated that the anchor will not be in place for more than a week (assuming there are no unforeseen circumstances, such as adverse weather).

It is noted that major maintenance work² to AWF05 during the operational phase may also require vessel entry.

Vessel entry into the ODA may also be required during the cable laying phase, as sections of export and inter-array cables will be laid in very close proximity to the ODA boundary (as close as ten metres). Dependant on maintenance required on the cables, similar vessel entry could be required during the operational phase. It is noted that while the consented Offshore Export Cable Corridor (OECC) does intersect the ODA, none of the export cable route options or inter-array cables are within the boundaries (see Figure 3).

The precise details of vessel entry requirements will be distributed to the MOD (via the DIO) as and when they become available, as set out in Table 6.

During the lifetime of the Development, marine coordination will be managed by a Marine Coordinator (MC) (see *Section 7.1*). During construction the MC will be based at a Control Room within the limits of Aberdeen Harbour. During Operation it is likely that the MC will move to a central operation room; however procedures within this plan will be maintained.

5.4 Buoyage

Prior to the Commencement of the Development, as approved by the Northern Lighthouse Board (NLB), the construction area will be marked with four Cardinal Marks (buoys), as shown in Figure 3. In addition, a Floating Light Detection and Ranging (FLiDAR) buoy (meteorological station) has been installed temporarily within the Development Area by AOWFL (Figure 3).

No buoyage is proposed to be installed during the operational phase and this has been confirmed by the NLB.

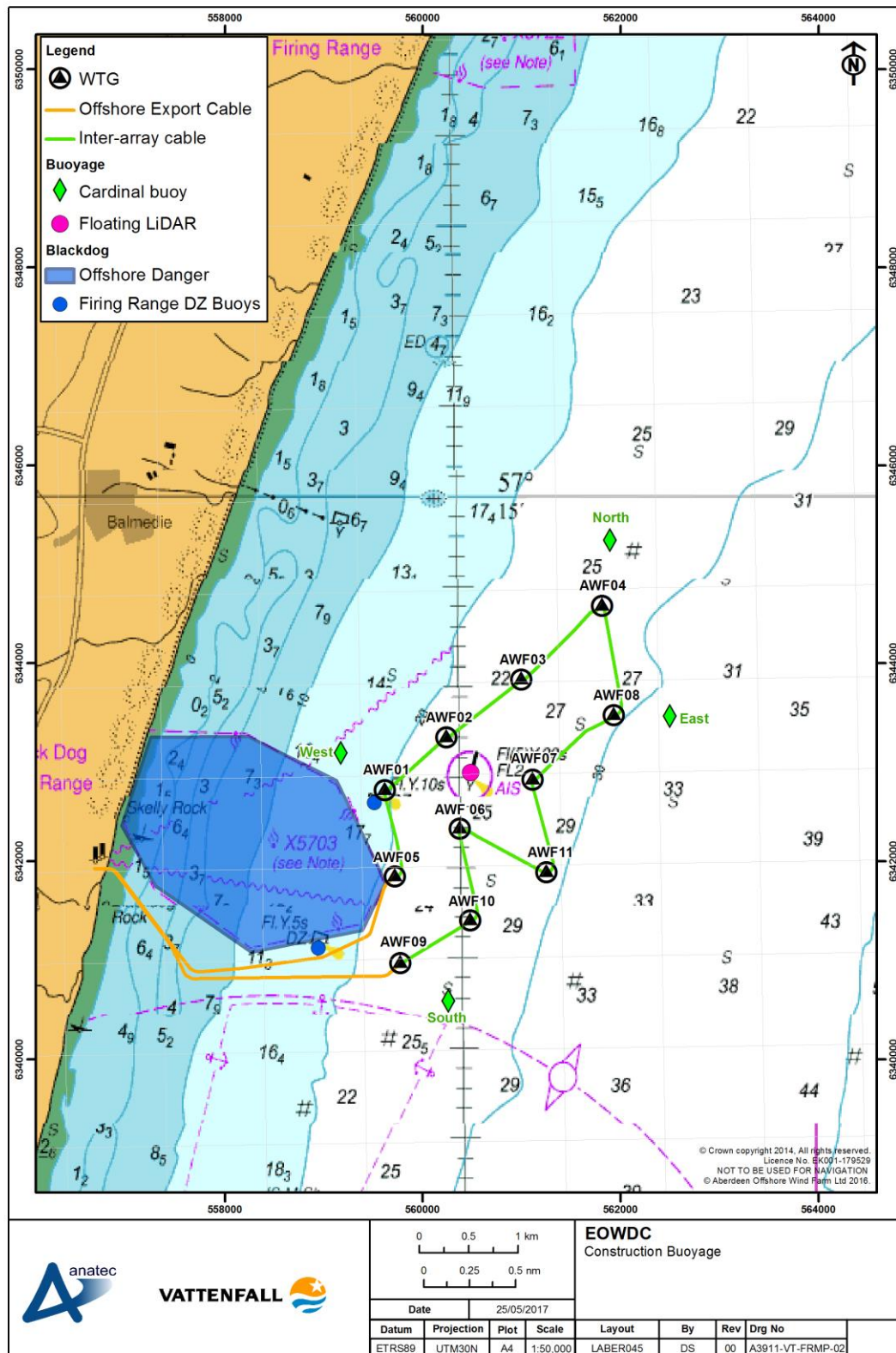
Currently, the ODA is marked with two DZ buoys, the northernmost of which is in very close proximity to WTG AWF01. The buoys are ballistic range markers, and therefore cannot be moved for safety reasons; however the continued presence of the DZ buoys is not currently anticipated to cause any issues during the construction phase. Coordinates for the DZ Buoys are given in Table 3.

² Major maintenance is defined as operational maintenance requiring the presences of a large vessel such as heavy lift vessel or jack-up vessel.

Table 3 – Firing Range DZ Buoy Positions

Buoy	Latitude	Longitude
Northern	57° 13' 21.85" N	002° 00' 51.62" W
Southern	57° 12' 34.49" N	002° 01' 26.40" W

Figure 3– Development Area and Buoyage relative to Blackdog Firing Range



6 VESSEL PROCEDURES

6.1 Vessel Compliance

All vessels associated with the Development will adhere to the procedures set out in this plan. In the first instance, vessels will comply with the International Regulations for the Prevention of Collisions at Sea (COLREGS 1972).

6.2 Vessel Routeing

6.2.1 Pre-Planned Routeing

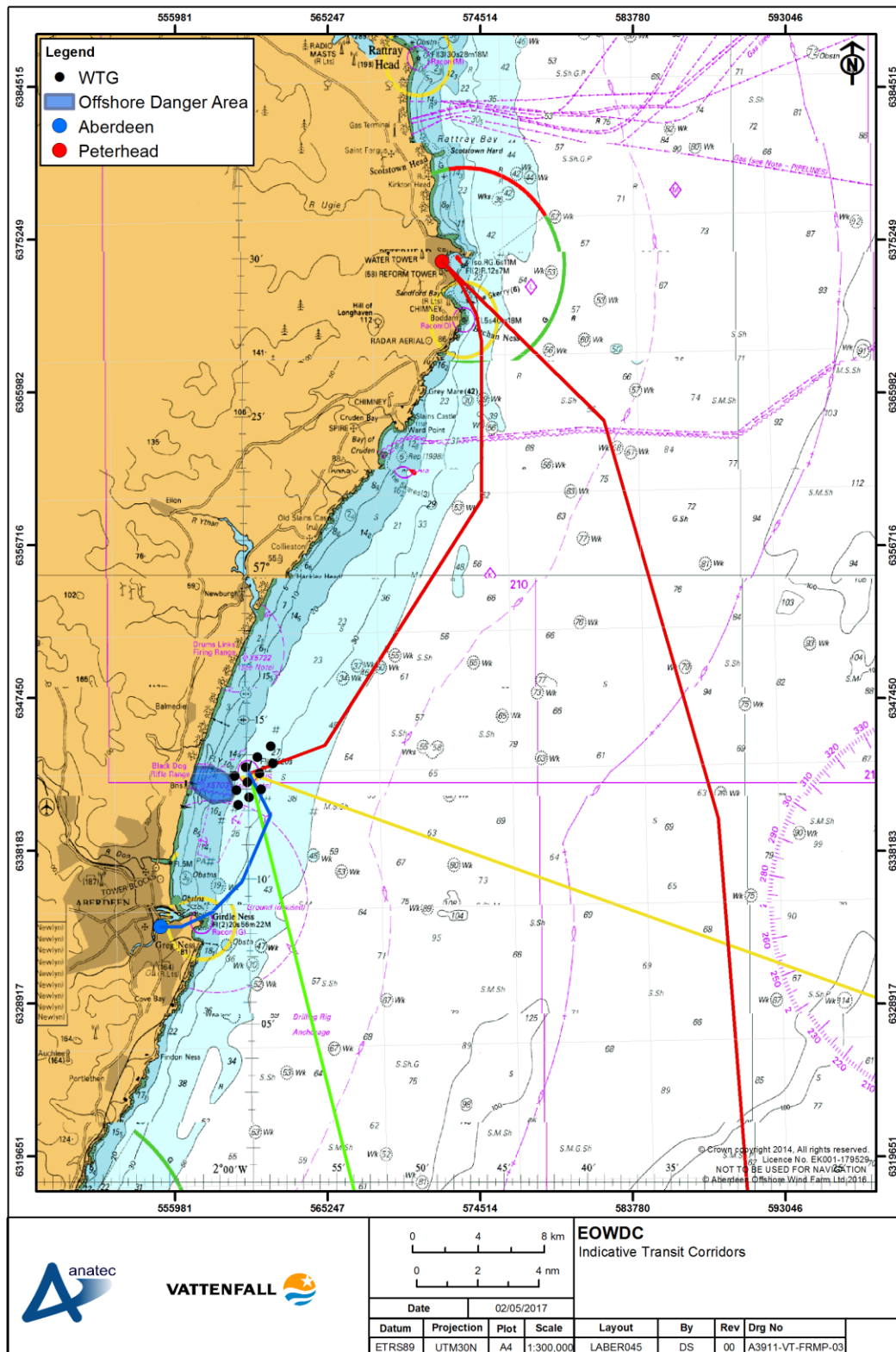
Due to the size of the Development Area, designated exit/entry points for construction/maintenance vessels have not been considered necessary, however as stated in the Navigational Safety Plan (NSP) (ABE-ENV-QB-0008), it is considered likely that vessels will enter the Development Area from the east, due to the presence of the Firing Range, and shallow waters to the west. Any entry into the ODA is therefore expected to be from vessels already within the Development Area (from the east / northeast).

Entry into the ODA will be from vessels requiring entry for construction/maintenance purposes only, it will be never be used for transit or anchoring purposes alone (i.e., entry into the ODA will be avoided wherever possible). The recommended routes for use by construction (and construction associated) vessels transiting between the Development and working ports are set out in the VMP (ABE-ENV-BD-0006), however it is noted that the indicative transit routes shown in the VMP are recommendations only and COLREGS (1972 and the Safety of Life at Sea Convention (SOLAS) (1974) remain the navigational priorities. The recommended routes are shown in Figure 4.

6.2.2 Emergency Vessel Route Deviations

In emergency circumstances, a construction/maintenance vessel may be required to unexpectedly enter the ODA (e.g., to avoid a collision). Procedures to be followed by the vessel in such a situation are given in *Section 8*.

Figure 4 – Recommended AOWFL Vessel Transit Routes



7 ROLES AND RESPONSIBILITIES

7.1 AOWFL Contact

The MC will act as the point of contact between AOWFL and the MOD (via the DIO) during the lifetime of the Development in all matters relating to the Blackdog Firing Range. If the MOD has any relevant concerns, they should contact the MC in the first instance.

The MC will be based in the Marine Coordination Centre (AOWFL Control Room) at Aberdeen Harbour during the construction phase, contact details of which are given in Table 4. Further contact details for the Duty Manager, who will act as a secondary contact, are included in the table.

During the Operational Phase, the primary AOWFL contact will be located at a central control room; contact details will be provided when available.

Table 4 – AOWFL MC Contact Details

Role:	Marine Coordinator	Duty Manager
Phone:	+44 (0) 7976 439 411	+44 (0) 7773 196 135
Email:	aowf.marinecoordinator@vattenfall.com	garry.macdonald@vattenfall.com

7.2 Ministry of Defence Designated Contact

General liaison with the MOD will be through the DIO, who is ultimately responsible for the Firing Range. In the event of an emergency (see *Section 8*), AOWFL may contact Range Control at the Firing Range directly.

The relevant MOD contact details are given in Table 5.

Table 5 – MOD Contact Details

Contact Description	Contact Details	Purpose
DIO Training Scotland Ops Room	DIOSDTrg-ScoBarryBuddonTSO@mod.uk	General liaison
Blackdog Range Control	Gary Archer (0131 310 3426)	Emergencies

7.3 Liaison between the Marine Coordinator and DIO/MOD

The MC will be responsible for providing the required information to the DIO in all matters relevant to vessel safety management associated with the Firing Range. The information to be provided to the DIO by the MC during each phase of the Development is detailed in Table 6. It is noted that in addition to the information in the table, information will also be promulgated to the DIO/MOD via Local Notice to Mariners, as set out in the NSP.

In agreement with and where practicable the DIO will be (through the MC) made aware of indicative timeframes for required vessel entry at least two months in advance.

Following on from the indicative time frames, construction or major maintenance vessel entry into the ODA (during both the construction and operational phases of the Development) will require a minimum of one week's notice, which should be given to the MC by the vessel contractor. The information listed below will be provided:

- Vessel (s) name and call sign;
- Vessel (s) Mobile Maritime Service Information (MMSI);
- Approx. time/date of entry;
- Approx. time/date of exit;
- Planned vessel route while within ODA, i.e., anchoring; and
- Nature of work to be undertaken.

If any changes to submitted entry requirements are required at short notice (e.g., in the event of adverse weather), the vessel contractor must inform the MC as soon as is practicable.

In addition to that listed above, all vessels must also make contact with the MC directly one hour prior to entry into the ODA, who will provide verbal confirmation that it is safe to enter. Additionally, as good practice, vessels shall check that there are no red flags or red lights displayed on the shore, which may indicate firing is taking place (see *Section 5.2*), and verbally confirm as such with the MC.

During consultation the DIO did not raise any concerns with vessels passing in close proximity to the ODA, as long as they do not enter. However, regular liaison between the MC and vessels transiting the area immediately surrounding the ODA will still be a requirement, as per the NSP.

Table 6 – Liaison between MC and DIO/MOD

Phase	Information to be Submitted	Requested MOD/DIO Action
Prior to Commencement of the Development	The Blackdog Firing Range Management Plan.	Confirmation of receipt and required amendments provided.
	The final, approved versions of the Emergency Response and Cooperation Plan (ERCoP) (ABE-HSS-QB-0045) and Emergency Response Plan (ERP) (ABE-HSS-QB-0004).	Confirmation of receipt.
	The anticipated construction program. This should include an indication of all dates where a requirement for entry into the Firing Range is anticipated.	Confirmation of receipt. Any identified issues relating to potential disturbances to Firing Range Activities or vessel/crew/personnel safety should be raised as soon as is practicable.

Phase	Information to be Submitted	Requested MOD/DIO Action
During Construction of the Development	Where possible two months' notice (in the form of an indicative schedule) will be given to the DIO prior to any anticipated entry into the ODA. The purpose of this is to give the DIO an indicative timeframe as to when vessel entry is required so that Firing Range Schedule can be compared. It is unlikely that precise details (i.e. vessel names) will be available at this stage; however any known relevant details will be included. If vessel entry is required in less than two months, notice will be given as soon as possible.	Confirmation of receipt. Any identified issues relating to potential disturbances to Firing Range Activities or vessel/crew/personnel safety should be raised as soon as is practicable.
	Confirmed details of entry requirements into the Firing Range will be issued to the DIO at least one week ³ in advance, with the following included: <ul style="list-style-type: none"> • Vessel (s) name and call sign; • Vessel (s) MMSI; • Approx. time/date of entry; • Approx. time/date of exit; • Planned vessel route while within ODA; and • Nature of work to be undertaken. 	Confirmation of receipt. Any identified issues relating to potential disturbances to Firing Range Activities or vessel/crew/personnel safety should be raised as soon as is practicable.
	A final notice, 24 hours prior to vessel entry.	Confirmation of receipt. Any identified issues relating to potential disturbances to Firing Range Activities or vessel/crew/personnel safety should be raised as soon as is practicable.
	If any changes are made to the construction program originally issued to the MOD, an updated version will be provided as soon as is reasonably practicable.	Confirmation of receipt. Any identified issues relating to potential disturbances to Firing Range Activities or vessel/crew/personnel safety should be raised as soon as is practicable.
Operational Phase	Where possible two months' notice (in the form of an indicative schedule) will be given to the DIO prior to any anticipated entry into the ODA. The purpose of this is to give the DIO an indicative timeframe as to when vessel entry is required so	Confirmation of receipt. Any identified issues relating to potential disturbances to Firing Range Activities or vessel/crew/personnel safety

³ It is noted that entry requirements into the ODA may need to be altered at short notice in certain circumstances, for example in the event of adverse weather. The DIO will be informed of any such changes as soon as practicable.

Phase	Information to be Submitted	Requested MOD/DIO Action
	<p>that Firing Range Schedule can be compared. It is unlikely that precise details (i.e. vessel names) will be available at this stage; however any known relevant details will be included.</p> <p>It is noted that the need for major maintenance work requiring vessel entry into the ODA may arise unexpectedly. In such a case, notice will be given to the DIO as soon as practicable.</p>	<p>should be raised as soon as is practicable.</p>
	<p>Confirmed details of entry requirements into the ODA will be issued to the DIO at least one week⁴ in advance, with the following included:</p> <ul style="list-style-type: none"> • Vessel (s) Name and call sign; • Vessel (s) MMSI; • Approx. time/date of entry; • Approx. time/date of exit; • Planned vessel route while within ODA; and • Nature of work to be undertaken. 	<p>Confirmation of receipt. Any identified issues relating to potential disturbances to Firing Range Activities or vessel/crew/personnel safety should be raised as soon as is practicable.</p>

The main purpose of the above communication is to ensure that no pre-planned entry into the ODA occurs from an AOWFL associated vessel without the prior knowledge of the MOD, and that the DIO can incorporate the anticipated construction programme into the Firing Range schedule or make AOWFL aware of key dates at the Firing Range.

⁴ It is noted that entry requirements into the ODA may need to be altered at short notice in certain circumstances, for example in the event of adverse weather. The DIO will be informed of any such changes as soon as practicable.

8 EMERGENCY RESPONSE PROCEDURES

8.1 Introduction

This section presents procedures to be followed in the event of an emergency in, or near the Firing Range. It is noted that detailed information of AOWFL's emergency procedures are available in the Emergency Response and Cooperation Plan (ERCoP) (ABE-HSS-QB-0045) and Emergency Response Plan (ERP) (ABE-HSS-QB-0004).

8.2 AOWFL Vessels Procedures

If an AOWFL vessel is required to enter the ODA in an emergency, the Master of the vessel shall make contact with the MC as soon as safely practicable; the MC will then contact the DIO as per section 8.3. It is noted that if urgent contact with the Firing Range is required, a vessel may make direct contact with Range Control.

As per obligations under SOLAS (1974), all AOWFL vessels will also be required to help any vessels requiring emergency assistance within the ODA.

8.3 Marine Coordinator Procedures

In the event of an emergency situation, the MC's primary responsibility will be to ensure the safety of all AOWFL vessels, crew, and personnel. The MC will inform all AOWFL vessels on-site of any emergencies, and provide updates of any related developments. If the situation is considered relevant to the Firing Range, the MC will also remain in communication with Range Control.

The MC will log details of all emergency situations, and will provide a debrief to the DIO after the event, if requested to do so.

8.4 Ministry of Defence Procedures

If the MOD becomes aware of an emergency situation that may place, or has placed, AOWFL vessels, crew, or personnel in danger, the MC should be informed as soon as safely possible.

As per their standard operating procedures (as per charted navigational safety information), it is assumed that if a vessel enters into the Firing Range unexpectedly while firing is taking place, the Sentries monitoring the ODA will call a ceasefire to any range users. Range Control should then make contact with the MC with any further procedures to be followed.

9 COSTS

S.36 Condition 10 requires that;

“The Company must meet all costs attributable to the delivery of the Management Plan.”

AOWFL confirms that whilst no further costs are anticipated, all costs attributable to the delivery of this FRMP will be met by the Company. If a construction/maintenance/survey or any other type of vessel is required to enter the Offshore Danger Area to facilitate the AOWFL project, while the Blackdog Firing Range is in operation or booked, AOWFL will be liable for any potential costs incurred by The Secretary of State for Defence.

10 COMPLIANCE WITH APPLICATION, ES AND SEIS

10.1 Introduction

In addition to the conditions presented in Table 1, Condition 7 of the S.36 Consent states:

“The Development must be constructed and operated in accordance with the terms of the Application and the accompanying Environmental Statement and the Supplementary Environmental Information Statement, except in so far as amended by the terms of the Section 36 consent and any direction made by the Scottish Ministers.”

The ES, associated SEIS and Application consultation responses detailed a number of mitigation commitments relevant to the Firing Range. Appendix A sets out where each commitment has been addressed within this FRMP.

11 REFERENCES

International Maritime Organisation (COLREGS 1972). *International Regulations for Preventing Collisions at Sea, as amended*. 1972.

Safety of Life at Sea (SOLAS) Convention, as implemented in the UK through *The Merchant Shipping (Safety of Navigation) Regulations* 2002.

(UKHO 2016) United Kingdom Hydrographic Office. Admiralty Sailing Directions North Sea West Pilot, NP54, Tenth Edition. 2016.

UKHO – Admiralty Navigational Charts

Marine Scotland (2013) Section 36 Consent Granted by the Scottish Ministers to Construct and Operate the European Offshore Wind Deployment Centre (EOWDC) Electricity Generating Station, Aberdeen Bay, Approximately 2 km East of Blackdog, Aberdeenshire.

Marine Scotland (2016) Marine Licence for Marine Renewables Construction Works and Deposits of Substances or Objects in the Scottish Marine Area. Reference 04309/16/1.

APPENDIX A COMPLIANCE WITH MITIGATION MEASURES

Table A1 presents the commitments made by AOWFL in the Application, ES, associated SEIS and consultation to operational procedures relevant to this FRMP.

Table A1 – ES and SEIS Mitigation relevant to this FRMP

Source and Reference	Details of Commitment	Implementation
ES- Ministry of Defence	No wind turbines should be placed within the safety exclusion zone at sea.	No WTGs will be placed within the safety exclusion zone at sea.
ES- Ministry of Defence	Operational procedures would be agreed with MOD to allow vessel access to the firing range exclusion zone for project activities during the lifetime of the project.	This FRMP will be consulted on with the MOD prior to finalisation and submission of this FRMP to MS-LOT.
ES- Other Marine Users	Following consultation with the Ministry of Defence (MOD) the layout of the wind farm was altered.	No WTGs will be placed within the safety exclusion zone at sea.
MOD Response to EOWDC Application- Annex A	Prior to the erection of any turbines on the site, the Company shall submit a Blackdog Firing Range Management Plan for the written approval of the Scottish Ministers, following consultation with the Ministry of Defence ("MOD").	This document represents the FRMP for the written approval of the Scottish Ministers, following consultation with the MOD.
MOD Response to EOWDC Application- Annex A	The Management Plan will identify the operational procedures to be implemented by the Company to ensure the safety of vessels, installations and personnel deployed within the offshore danger area (X5703) whilst range activities are not compromised.	Sections 6 to 8 of this FRMP identify the operational procedures to be implemented by AOWFL to ensure the safety of vessels, installations and personnel deployed within the offshore danger area (X5703) whilst range activities are not compromised.
MOD Response to EOWDC Application- Annex A	The Company will meet any costs that are attributable to the delivery of the Management Plan.	Section 9 of this FRMP confirms that AOWFL will comply with this condition requirement.