European Offshore Wind Deployment Centre

Navigational Safety Plan

ABE-ENV-QB-0008

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Submitted for approval pursuant to the discharge of Section 36 Consent Condition 26

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Revision	Date	Revision changes
0	13/03/2017	First issue

Navigational Safety Plan Overview

Purpose and objectives of the Plan

This Navigational Safety Plan (NSP) 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 NSP is to set out the navigational safety measures to be applied during the construction and operation of the European Offshore Wind Deployment Centre (EOWDC - also known as the Aberdeen Offshore Wind Farm).

Scope of the Plan

This NSP covers, in line with the requirements of the S.36 Consent conditions and in line with industry standards, the following:

- Navigational safety measures during construction: temporary lighting and marking; buoyage; safety zones; management of the construction area; recommended routes and entry/exit gates; and vessel safety requirements;

- Navigational safety measures during operation: marine coordination; safety zones; management of operations and maintenance activities; recommended routes and entry/exit gates; and, vessel safety requirements;

- Anchoring areas;

- Firing Range Management Plan;

- Notifications to other stakeholder and sea users;

- Emergency response; and

- Compliance with original Application.

Structure of the Plan

This NSP is structured as follows:

Sections 1 and 2 set out the scope and objectives of the NSP 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 EOWDC.

Section 5 describes the navigational safety measures to be applied during construction.

Section 6 describes the navigational safety measures to be applied during operation.

Sections 7 to 10 set out information on anchoring, the Blackdog Firing Range Plan, notifications to other sea users and emergency response, which are applicable to all phases of the Development.

Section 11 confirms that the measures set out in the NSP are compliant with those described and assessed in the original Application.

Plan Audience

This NSP is intended to be referred to by relevant personnel involved in the design, construction, and operation of EOWDC, including AOWFL personnel, Contractors and Subcontractors.

Plan Locations

Copies of this NSP 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;

- All site offices dealing with marine operations;

- At the AOWFL Marine Coordination Centre (MCC); and

- On all vessels.

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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 deemed to be adverse to the safety of a vessel or operational limits have been (or are forecast within a prescribed time-frame) to be exceeded and associated work activity is prevented.
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 2km off the coast of Aberdeenshire in Aberdeen Bay with a generation capacity of up to 100 MW.
Blackdog Firing Range Management Plan	The Management Plan required to be submitted for approval under Condition 10 of the section 36 Consent.
Cable Laying Strategy (CLS)	The Strategy to be submitted for approval under Condition 25 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.
Commencement of the Works	The date on which the first vessel arrives on the Site to carry on any marine Licensable Marine Activity in connection with the construction of the Works, as defined by the Marine Licence.
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 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.
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 export cable corridor, including any other works, as shown in Part 4 of the Marine Licence (named as Lease Boundary in the Marine Licence).

Term	Definition / Description
Ecological Clerk of Works (ECoW)	Ecological Clerk of Works as required under condition 3.2.1.4 of the Marine Licence. primarily, but not exclusively, for environmental liaison to establish and maintain effective communications between the Licensee, contractors, stakeholders, conservation groups and other users of the sea during the period in which licensed activities authorised under this licence are undertaken.
Electricity Act	the Electricity Act 1989 (as amended).
Environmental Statement (ES)	The Statement submitted by the Company on 1 August 2011 as part of the Application.
Inter-array cables	Electricity cables connecting the WTGs.
Licensable Marine Activity	Any activity listed in section 21(1) of the 2010 Act.
the Licensee	Aberdeen Offshore Wind Farm Limited, a company registered in Scotland (registered number SC278869).
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	• 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 Offshore Export Cable.
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 Mean High Water Springs (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.
Operation and Maintenance Plan (OMP)	The Plan to be submitted for approval under Condition 3.2.3.5 of the Marine Licence.

Term	Definition / Description
Section 36 Consent	Consent granted under section 36 of the Electricity Act 1989 for the construction and operation of the EOWDC.
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.
Subcontractor	Any Contractor/Supplier (individual or firm) providing services to the project, hired by the Contractors (not AOWFL).
Supplementary Environmental Information Statement (SEIS)	The Statement submitted to the Scottish Ministers by the Company on 6th August 2012 as part of the Application.
Vessel Management Plan (VMP)	The Plan to be submitted for approval under Condition 24 of the Section 36 Consent.
the Works	The European Offshore Wind Deployment Centre electricity generating station in Aberdeen Bay, approximately 2 kilometres east of Blackdog, Aberdeenshire, as described by the Marine Licence.

Acronym Definitions

Term	Definition
AIS	Automatic Identification System
AOWFL	Aberdeen Offshore Wind Farm Limited
BEIS	Business, Energy, and Industrial Strategy (UK Department)
CAA	Civil Aviation Authority
CGOC	Coastguard Operation Centre
CMS	Construction Method Statement
COLREGS	International Regulations for Preventing Collisions at Sea
ECoW	Ecological Clerk of Works
EOWDC	European Offshore Wind Deployment Centre
ERP	Emergency Response Plan
ERCoP	Emergency Response Co-operation Plan
ES	Environmental Statement
HSSE	Health, Safety, Security and Environment
IALA	International Association of Lighthouse Authorities
IMO	International Maritime Organisation
KIS-ORCA	Kingfisher Information Service – Offshore Renewable & Cable Awareness
km	Kilometre
LAT	Lowest Astronomical Tide
LNtM	Local Notice to Mariners
MAIB	Marine Accident Investigation Branch
MC	Marine Coordinator
MCA	Maritime and Coastguard Agency
MCC	Marine Coordination Centre
MHWS	Mean High Water Springs
MGN	Marine Guidance Note
MRCC	Maritime Rescue Co-ordination Centre
MS-LOT	Marine Scotland Licensing Operations Team
MW	Megawatt
MOD	Ministry of Defence

Term	Definition
m	Metres
NAVAREA 1	Navigation Area 1
NAVTEX	Navigational Telex
NLB	Northern Lighthouse Board
nm	Nautical Mile
NMP	Navigational Marking Plan
NRA	Navigation Risk Assessment
NSP	Navigational Safety Plan
NtM	Notice to Mariners
O&M	Operations and Maintenance
OEC	Offshore Export Cables
OFCOM	Office of Communications
OMP	Operation and Maintenance Programme
OREI	Offshore Renewable Energy Installation
RAM	Restricted in Ability to Manoeuvre
RAMS	Risk Assessment and Method Statements
RYA	Royal Yachting Association
SAR	Search and Rescue
SEIS	Supplementary Environmental Impact Statement
SFF	Scottish Fishermen’s Federation
UKHO	United Kingdom Hydrographic Office
VHF	Very High Frequency
VMP	Vessel Management Plan
VTS	Vessel Traffic Services
WTG	Wind Turbine Generator

1 INTRODUCTION

1.1 Background

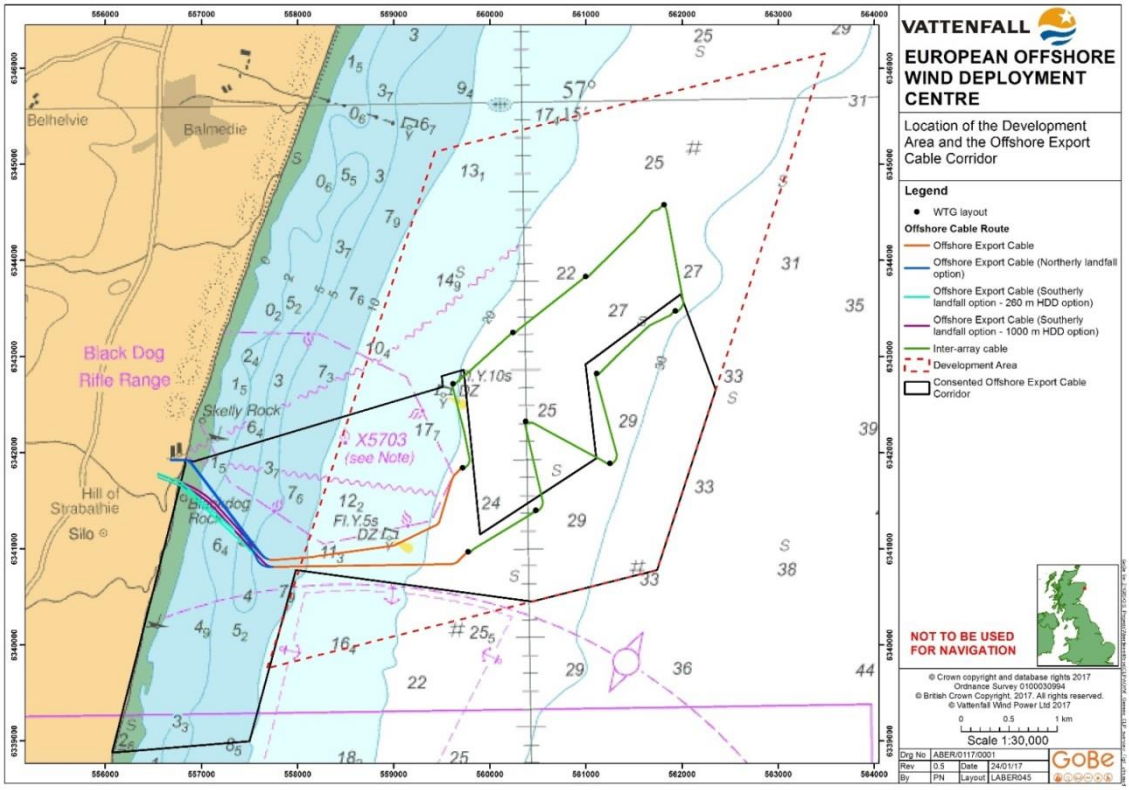
On 26 March 2013, Aberdeen Offshore Wind Farm Limited (AOWFL) received consent from the Scottish Ministers under Section 36 (S.36) of the Electricity Act 1989 for the construction and operation of the European Offshore Wind Deployment Centre (EOWDC - also known as the Aberdeen Offshore Wind Farm) and 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 - 4.1 km long and will reach landfall at the adjacent coastline in Aberdeen Bay (at one of two landfall options) (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.



1.2 Objectives of this Document

The S.36 Consent contains a variety of conditions that must be discharged through approval by the Licensing Authority prior to the commencement of any offshore construction works. One such requirement is the approval of a Navigational Safety Plan (NSP), which is to provide details of the measures that will be used to manage navigational safety throughout construction and operation of the Development.

The relevant conditions setting out the requirements for a NSP for approval, that are to be discharged by this plan, are presented in full in Table 1.

Table 1 – Consent conditions to be discharged by the NSP

Consent Document	Condition Reference	Condition Text	Where Addressed
S.36 Consent	Condition 26	Prior to the Commencement of the Development, a Navigational Safety Plan must be submitted to, and approved by, the Scottish Ministers in consultation with the Maritime and Coastguard Agency (MCA), the Northern Lighthouse Board (NLB), Aberdeen Harbour Board, the Chamber of Shipping and any other navigational advisors, or such other advisors, as may be required at the discretion of the Scottish Ministers.	This document sets out the NSP for approval by the Scottish Ministers. Consultation to be undertaken by Scottish Ministers.
		The Navigational Safety Plan must include, but is not limited to, the following issues: (a) Navigational safety measures;	*Section 5* (construction) and *Section 6* (operation).
		(b) Exclusion zones[1];	*Section 5.5* (construction) and *Section 6.4* (operation).
		(c) Notice(s) to Mariners and Radio Navigation Warnings;	*Section 9*
		(d) Buoyage;	*Section 5.4* (construction buoyage) and *Section 6.3*
		(e) Anchoring areas; and	*Section 7*
		(f) Lighting.	*Section 5.2* (Construction) and *Section 6.3* (Operational)
		The Development must be constructed and operated in accordance with the Navigational Safety Plan at all times.	This document sets out the NSP for approval by the Licensing Authority.

This document is intended to satisfy the requirements of the relevant S36 Consent condition by providing a Navigational Safety Plan that can be practically implemented during construction and operation to ensure safe navigation. It is important to note that this NSP is not intended to give specific navigational advice but to highlight specific and local information that is important for the Marine Coordinator (MC) and management of vessels.

This NSP sets out means to mitigate risks to vessels working on the Development, (as well as third party vessels) during construction and operation and maintenance to ensure that navigational safety is not compromised. Matters related to the management of vessel

[1] Exclusions zones are referred to as safety zones through this document, at the request of the MCA.

movements are set out, for approval in the Vessel Management Plan (VMP) (ABE-ENV-BD-0006) whilst matters relating to the lighting and marking design of the EOWDC to ensure safe navigation is set out for information in the Navigational Marking Plan (NMP) (ABE-ENV-DB-0009).

In addition to the specific consent requirements for a NSP and the requirements thereof (as set out in Table 1), this NSP also includes information in respect of a number of other conditions within the Offshore Consents which are linked to the NSP; these are set out in Table 2.

Whilst this NSP does not seek to explicitly discharge these conditions, it provides the relevant information on the measures to be put in place to allow them to be discharged prior to commencement of the EOWDC, and/or during the progress of construction and during operation.

Table 2 – Other consent conditions relevant to this NSP

Consent Document	Condition Reference	Summary of Condition	Where Addressed
Marine Licence	3.2.1.5	Navigational safety The Licensee must, as soon as reasonably practicable prior to the Commencement of the Works, notify the United Kingdom Hydrographic Office (UKHO) to permit the promulgation of maritime safety information and updating of nautical charts and publications through the national Notice to Mariners (NtM) system. The Licensee must, as soon as reasonably practicable prior to Commencement of the Works, ensure that local mariners, fishermen's organisations, HM Coastguard and the Maritime Rescue Coordination Centre (MRCC) Aberdeen[2] are made fully aware of the activity authorised under this licence through Local Notice to Mariners (LNtM) or any other appropriate means. The Licensee must ensure that details of the Works are promulgated in the Kingfisher Fortnightly Bulletin, as soon as reasonably practicable prior to Commencement of the Works, to inform the Sea Fish Industry of the vessel routes, the timings and the location of the Works and of the relevant operations. The Licensee must prior to Commencement of the Works, complete an "Application for Statutory Sanction to Alter / Exhibit" form and submit this to the NLB for the necessary sanction to be granted.	Section 9

[2] Since the issue of the Marine Licence, Aberdeen MRCC has been replaced by Aberdeen Coastguard Operations Centre.

Consent Document	Condition Reference	Summary of Condition	Where Addressed
Marine Licence	3.2.2.3	Navigational safety The Licensee must notify the UKHO of the progress of the Works to permit promulgation of maritime safety information and updating of nautical charts and publications through the national NtM system. The Licensee must notify local mariners, fishermen's organisations and HM Coastguard, in this case MRCC Aberdeen, of the progress of the Works through LNtM or any other appropriate means. The Licensee must ensure that the progress of the Works is promulgated in the Kingfisher Fortnightly Bulletin to inform the Sea Fish Industry of the vessel routes, the timings and the location of the Works and of the relevant operations. The Licensee must ensure the process of removing any part of the infrastructure, or such alterations are made, within one month of notice being given by the Licensing Authority at any time it is considered necessary or advisable for the safety of navigation, and not replaced without further consent of the Licensing Authority. The Licensee will be liable for any expense incurred. The Licensee must ensure that no radio beacon or radar beacon operating in the marine frequency bands are installed or used on the Works without the prior written approval of the Office of Communications (OFCOM).	Section 9
Marine Licence	3.2.2.4	Marking, lighting and signals of the Works The Licensee must ensure that the Works are marked and lit in accordance with the requirements of the NLB and the current Civil Aviation Authority (CAA) Policy and Guidance (or any other relevant documents that, from time to time, may supersede that Guidance) at all times and such marking and/or lighting must be continued unless and until such time as the Licensing Authority, by notice, relevantly varies this licence under section 30 of the 2010 Act. The Licensee must ensure that no marks or lights, other than those required by virtue of this licence, may be displayed unless they have been approved, in writing, by the NLB, CAA and the Licensing Authority. The Licensee must ensure that the Works are marked in accordance with the International Association of Lighthouse Authorities (IALA) Recommendation O-139 on The Marking of Man-Made Offshore Structures.	Section 5.2 and 5.4 (construction) and Section 6.3 (operation)
Marine Licence	3.2.2.5	Marking, lighting and signals of jack up barges and vessels The Licensee must ensure that any jack up barges and vessels used during the Works must, when jacked up, exhibit signals in accordance with the UK Standard Marking Schedule for Offshore Installations.	Section 5.8 (construction) and Section 6.7 (operation)

Consent Document	Condition Reference	Summary of Condition	Where Addressed
Marine Licence	3.2.3.2	Navigational safety The Licensee must, as soon as practicable following the Completion of the Works, notify the UKHO of the Completion of the Works to permit the promulgation of maritime safety information and updating of nautical charts and publications through the national NtM system. The Licensee must ensure that local mariners, fishermen's organisations and HM Coastguard, in this case MRCC Aberdeen[2], are informed of the Completion of the Works. The Licensee must ensure that the Completion of the Works is promulgated in the Kingfisher Fortnightly Bulletin to inform the Sea Fish Industry. The Licensee must ensure the process of removing any part of the infrastructure, or such alterations are made, within one month of notice being given by the Licensing Authority at any time it is considered necessary or advisable for the safety of navigation, and not replaced without further consent of the Licensing Authority. The Licensee will be liable for any expense incurred. The Licensee must ensure that no radio beacon or radar beacon operating in the marine frequency bands are installed or used on the Works without the prior written approval of OFCOM Licensing Authority.	Section 9
Marine Licence	3.2.3.4	Markings, lighting and signals of the Works The Licensee must ensure that the Works are marked and lit in accordance with the requirements of the NLB and the current CAA Policy and Guidance (or any other relevant documents that from time to time may supersede that Guidance) at all times and such marking and/or lighting must be continued unless and until such time as the Licensing Authority, by notice, relevantly varies this licence under section 30 of the 2010 Act. The Licensee must ensure that the Works are marked in accordance with IALA Recommendation O-139 on The Marking of Man-Made Offshore Structures.	Section 5.2 (construction) and Section 6.3 (operation)

1.3 Linkages with other Consent Plans

This NSP sets out the proposed navigational safety measures for the EOWDC. Ultimately, however it will form part of a suite of approved documents that will provide the framework for the construction process – namely the other Consent Plans required under the S.36 Consent and Marine Licence.

The consent conditions relating to this NSP do not explicitly identify linkages between this and other Consent Plans (see Table 1). However, other conditions in the consents require that several Consent Plans be consistent with the NSP; these plans are identified in Table 3.

In addition, this NSP makes reference to a number of other relevant consent plans and documents that are not explicitly linked in the consent conditions but that have a bearing on or contain information relevant to this NSP.

Table 3 – NSP linkages with other Consent Plans and documents

Other Consent Plan	Consistency with, and linkage to, the NSP
The Vessel Management Plan (VMP) (ABE-ENV-BD-0006) (required under S.36 Consent Condition 24)	The VMP will consider the management and coordination of vessels. The VMP must be, so far as is reasonably practicable, consistent with the NSP.
The Construction Method Statement (CMS) (ABE-ENV-DB-0014) (required under S.36 Consent Condition 13)	The purpose of the CMS is to detail the methods that will be implemented during the construction of the Development. The CMS must be, so far as is reasonably practicable, consistent with the NSP.
The Operation and Maintenance Programme (OMP) (ABE-ENV-BD-0016) (required under Marine Licence Condition 3.2.3.5)	The OMP sets out the procedures and good working practices for the operational and maintenance (O&M) phase of the Development. The OMP must be, so far as is reasonably practicable, consistent with the NSP.
The Blackdog Firing Range Management Plan (ABE-ENV-DB-0013) (required under S.36 Consent Condition 10)	The Blackdog Firing Range Management Plan sets out the procedures for the management of navigational safety within the firing range and on approach to the range. The Blackdog Firing Range Management Plan must be, so far as is reasonably practicable, consistent with the NSP.
The Navigational Marking Plan (NMP) (ABE-ENV-DB-0009) (not required under any consent conditions but issued to Marine Scotland Licensing Operations Team (MS-LOT) for information)	The NMP details the lighting and marking of the Development in accordance with the relevant maritime and aviation legislation. The NMP must be, so far as is reasonably practicable, consistent with the NSP.
The Emergency Response Cooperation Plan (ERCoP) (ABE-HSS-QB-0045) (required under Annex 5 of Marine Guidance Note 543) (MCA 2016)	The ERCoP sets out information and procedures relevant to emergency response.

Some of these documents will be submitted for approval by the Scottish Ministers subsequent to the approval of NSP. Consistency between these documents and the NSP will

be achieved by ensuring that the later documents are consistent with the terms of the already approved NSP. Note that other relevant consent plans are cross-referenced as appropriate in this NSP but the detail from those other plans is not repeated here.

1.4 Structure of this NSP

In response to the specific requirements of the S.36 Consent condition, this NSP 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 NSP has been provided. The document structure is set out in Table 4.

Table 4 – NSP document structure

Section		Summary of Content
1	Introduction	Background to consent requirements and overview of the NSP scope and structure, and identifies those other Consent Plans relevant to the NSP and provides a statement of consistency between this NSP and those plans.
2	Statements of Compliance	Sets out the Aberdeen Offshore Wind Farm Limited (AOWFL) statements of compliance in relation to the NSP Consent Condition and the broader construction process.
3	Updates and Amendments to this NSP	Sets out the procedures for any required updating to or amending of the approved NSP and subsequent further approval by the Scottish Ministers.
4	Development Overview	Provides an overview of the Development.
5	Navigational safety measures during construction	Sets out the navigational safety measures to be adopted during the construction phase including: marine coordination, temporary lighting and marking, buoyage, safety zones (including management of safety zones), recommended routes and entry and exit points, construction vessels, cable laying and other restricted in ability to manoeuvre (RAM) operations
6	Navigational safety measures during operations and maintenance	Sets out the navigational safety measures to be adopted during the operational phase including: marine coordination, lighting and marking, safety zones, management of operations and maintenance activities, recommended routes and entry and exit points, operations and maintenance vessels, RAM operations and subsea cable inspections.
7	Anchoring areas	Describes the areas recommended by Admiralty Publications for anchoring (and areas to be avoided).
8	Blackdog Firing Range Management Plan	Describes the purpose of the Blackdog Firing Range Management Plan.
9	Promulgation of information	Sets out the notices to mariners, radio navigational safety warnings and other notifications to be promulgated at various stages of the Development (prior to, during and following construction and during operation).
10	Emergency Response	Sets out the framework for the emergency response procedure and marine incident reporting
11	Compliance with the Application, Environmental Statement (ES) and Supplementary Environmental Information Statement (SEIS)	Sets out how the mitigation measures related to navigational safety identified in the ES and Supplementary SEIS are to be delivered.

2 STATEMENTS OF COMPLIANCE

2.1 Introduction

The following statements are intended to re-affirm 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 NSP 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 NSP).

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 NSP (unless otherwise approved in advance by the Scottish Ministers / the Licensing Authority).

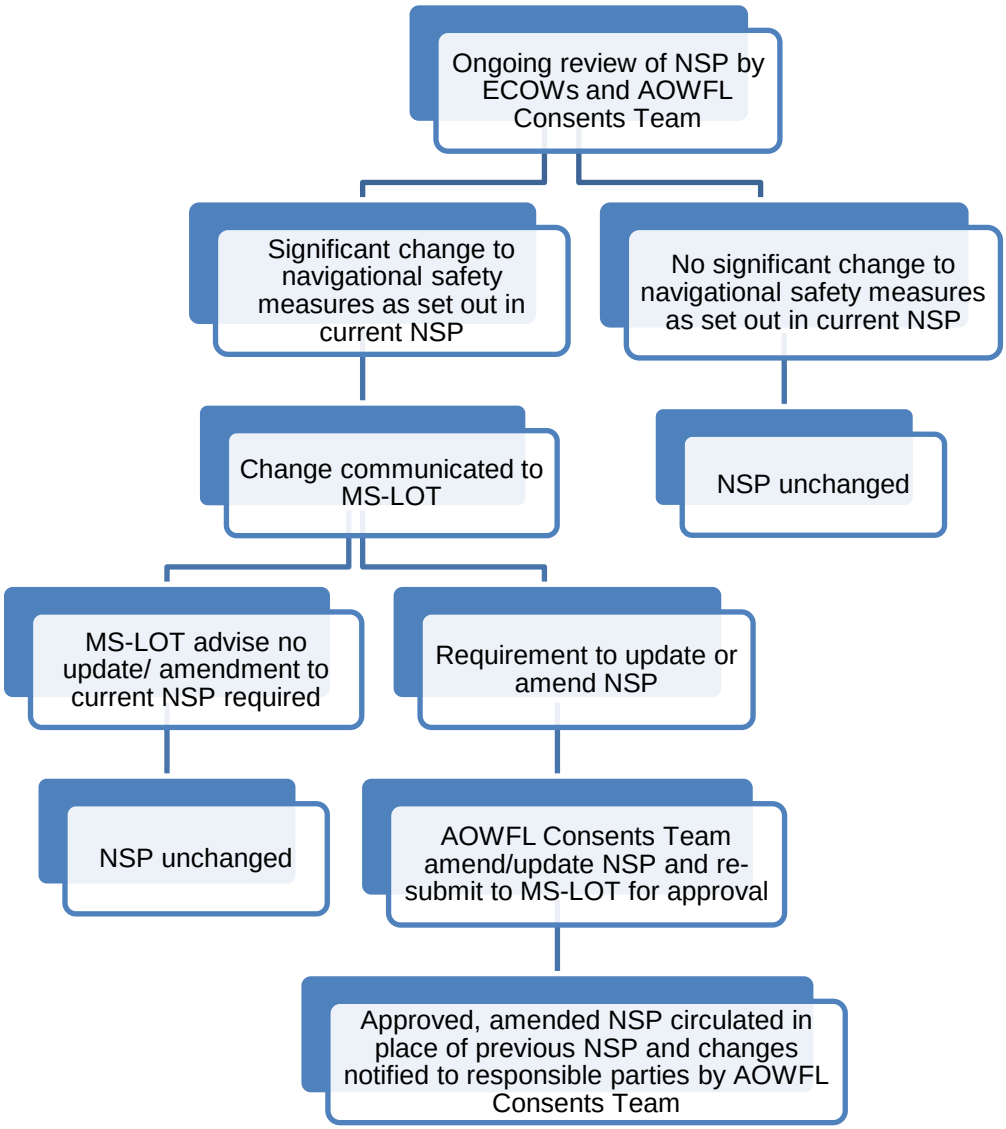
AOWFL, in undertaking the construction and operation of the EOWDC, will comply with AOWFL Health, Safety, Security and Environment systems and standards, the relevant SHE legislation and such other relevant legislation and guidance so as to protect the safety of construction personnel and other third 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. A list of relevant legislation, policy and guidance with which this NSP complies is presented in Appendix A.

3 UPDATES AND AMENDMENTS TO THIS NSP

Where it is necessary to update this NSP in light of any significant new information related to navigational safety requirements, AOWFL proposes to use the change management process set out in Figure 2 to identify such information, communicate changes to the Scottish Ministers, re-draft the NSP, seek further approval of amendments or updates, and disseminate the updated version of the NSP.

Figure 2 – NSP Change Management Procedure



4 DEVELOPMENT OVERVIEW

4.1 Introduction

This section provides a brief overview of the EOWDC and 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 WTGs to one of two cable landfall locations at Blackdog, within Aberdeen Bay, and connecting to the onshore buried 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 (EOWDC Document reference: ABE-ENV-BD-0017).

5 NAVIGATIONAL SAFETY MEASURES DURING CONSTRUCTION

5.1 Introduction

The following section sets out the navigational safety measures that AOFWL will implement during the construction phase of the EOWDC, including details on matters specifically required by the consent conditions:

- Temporary construction lighting and marking;
- Marine Coordination;
- Construction Buoyage; and
- Construction safety zones.

In addition, it sets out a number of additional requirements relating to:

- Recommended routes and entry/exit gates;
- Matters relating to construction vessels; and
- Cable laying and other Restricted in Ability to Manoeuvre (RAM) activities.

Details relating to anchorage areas, the promulgation of information and emergency response and coordination procedures are set out separately in *Sections 7, 9,* and *10*, respectively.

All AOWFL vessels will implement and maintain Risk Assessment and Method Statements (RAMS) for all operations. All contracted vessels will also be required to comply with AOWFL's vessel procedures, including the need for audits (e.g., Common Marine Inspection Document).

5.2 Temporary Lighting and Marking

Marine and aviation marking, including lights, visual marks, and construction buoyage will be provided in accordance with the Northern Lighthouse Board (NLB), the Civil Aviation Authority (CAA), Maritime and Coastguard Agency (MCA) and Ministry of Defence (MOD) requirements.

Detailed information relating to lighting and marking of the EOWDC during the construction phase is set out in the NMP (ABE-ENV-BD-0009).

Prior to commencing construction of the EOWDC, AOWFL will complete an "Application for Statutory Sanction to Alter/Exhibit" form and submit this to the NLB for the necessary sanction to be granted. This application is required for any Aids to Navigation that will be in situ for more than six months.

During construction, the EOWDC shall be marked and/or lit as required by the NLB (and as set out in the NMP and the marking will be continued unless and until the Licensing Authority directs otherwise.

5.3 Marine Coordination Centre

Construction activities will be managed from the Marine Coordination Centre (MCC) in the EOWDC Control Room located at Aberdeen Harbour. The MCC will be the focus on marine activities and coordinate all communications internally and to third parties. It will also maintain a copy of the Emergency Response Cooperation Plan (ERCoP) (*Section 10*) and will be the main internal point of contact in the event of emergency incidents for AOWFL associated vessels.

5.3.1 Liaison with Aberdeen Harbour Vessel Traffic Service

Where practicable, all AOWFL vessels departing or entering Aberdeen harbour will follow the standard reporting procedures associated with Aberdeen Vessel Traffic Service (VTS).

It is noted that due to the proximity of the Development from Aberdeen Harbour, advanced warning of arrival, as described in the Aberdeen Harbour Arrival Procedures, is likely to be impractical for the majority of vessels associated with the Development (for example, it is not always practical for a vessel working at the Development to give 24 hours notice of arrival). However, no AOWFL vessel will enter the VTS area without first receiving permission to do so.

All AOWFL vessels will monitor the Aberdeen VTS working channel whilst offshore operations are underway.

Where appropriate, Aberdeen VTS will be informed of any special operations (i.e., any operations requiring a RAM vessel) undertaken for the Development.

5.4 Construction Buoyage

The construction area will be the area defined by the presence of the agreed construction buoyage, as required by NLB, the detail of which is set out in detail in the NMP and illustrated in Figure 3.

In summary, the construction buoyage will be comprised of four cardinal buoys marking the north, east, south and west of the site. The cardinal buoys will mark the construction area, referred to as the buoyed construction area.

The cardinal buoys shall have a minimum diameter of 2.5 m, a focal plane of 3 m, and a light range of four nautical miles (nm). Each will also be fitted with a radar reflector and be designed to survive any expected weather conditions (including adverse weather) at the site.

The offshore export cable works will not be marked via buoyage during the cable installation works.

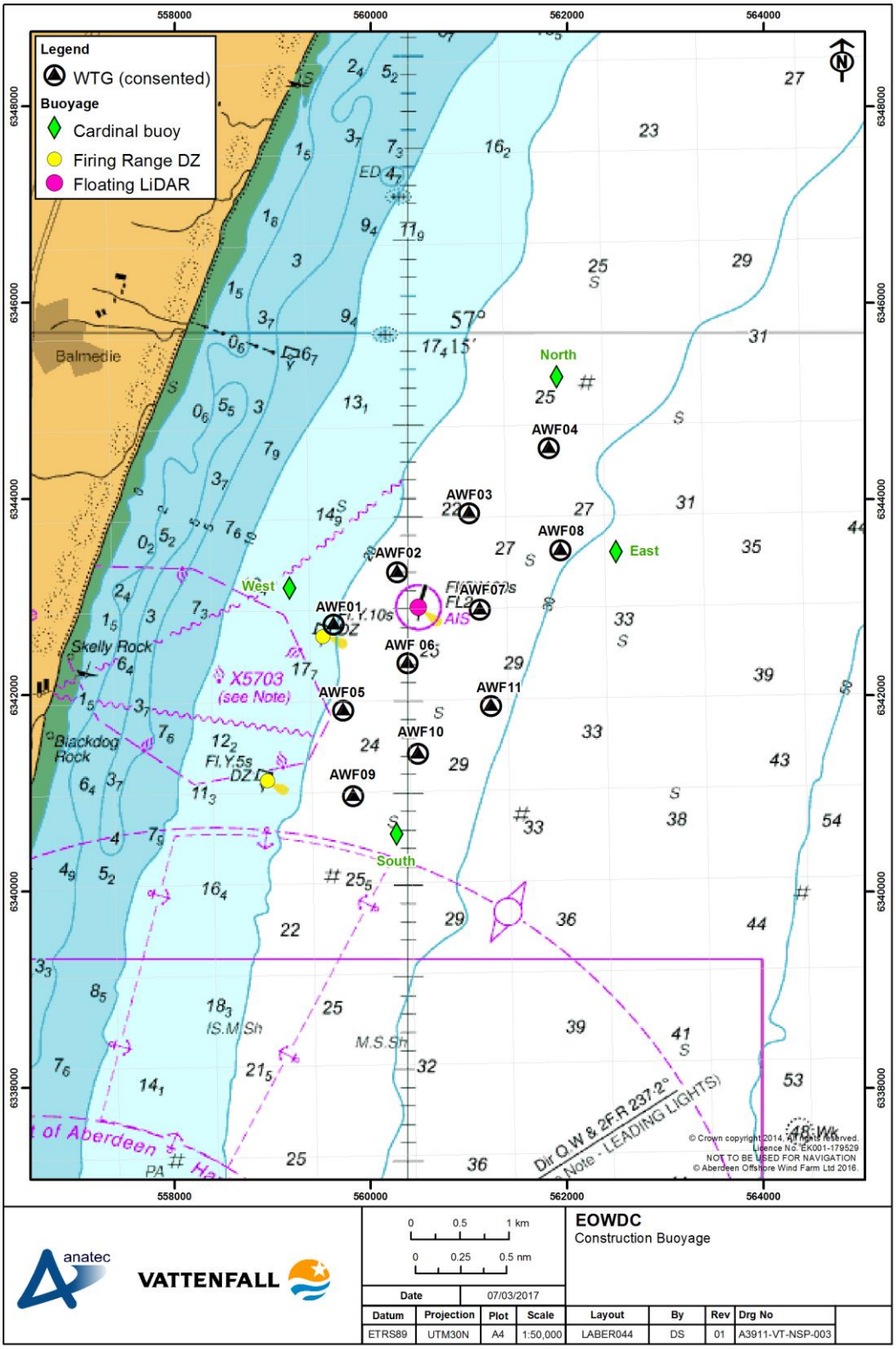
The buoyed construction area around the Development Area is an area that vessels are advised not to enter or transit through by the presence of the cardinal marks, however there is no legislation preventing a vessel from entering (see *Section 5.5* regarding safety zones). Information relating to the buoyage will be promulgated in Admiralty Notice to Mariners (NtM), Local Notice to Mariners (LNtM), and radio navigational warnings as set out in *Section 9* of this NSP.

Following the final commissioning of the operational marking for the Development, the buoyage used during the construction period will be removed, in agreement with NLB, and as set out in the NMP.

5.4.1 Guard Vessels

In addition, it is possible that at particular times, for example when vessels are vulnerable due to partially completed construction works or a particular activity within the construction works, the construction area will be monitored by a Guard Vessel to further protect and provide information to any third party vessels. This decision will be based on a risk assessment of the activities. It is noted that a Guard Vessel may be required to monitor safety zones as per *Section 5.5*.

Figure 3 – Development Area Construction Buoyage



5.5 Construction Safety Zones

Section 95 and Schedule 16 of the Energy Act 2004 set out the basic requirements for applying for a safety zone to be placed around or adjacent to an offshore renewable energy installation (OREI). The Electricity (Offshore Generating Stations) (Safety Zones) (Applications Procedures and Control of Access) Regulations 2007 clarify the requirements for applications. It applies to territorial waters in or adjacent to Scotland and within the Renewable Energy Zone.

It is noted that from the 1st April 2017, the application process for safety zones within Scottish waters will be devolved from the Department for Business, Energy, and Industrial Strategy (BEIS) to Marine Scotland. An application (ABE-ENV-QB-0015) will be made to Marine Scotland, accompanied by a layout plan and construction programmes, and will also include proposals for notifying relevant stakeholders. In order to ensure compliance, AOWFL will liaise with both BEIS and Marine Scotland throughout the safety zone application process. This is discussed in full in the Safety Zone application.

During construction, an application will be made for safety zones of 500 metres (m) around the construction works (this will act to prohibit other marine users from entering the designated safety zone area, except during emergency incidents and with the exception of those vessels engaged in construction activities).

The construction safety zones will be applied on a “rolling” basis i.e. their application will follow the progress of the construction activities as it proceeds across the Development Area. The rolling safety zone will be identified by the presence of a construction vessel working at an installation site. Construction safety zones would be applied around the major installation works, including:

- Installation of foundations and jacket structures;
- Inter-array and OEC installation, burial and connections to the WTG jacket structures; and
- Erection of the WTGs on the foundation.

In addition, smaller safety zones of 50 m radius may be applied for, around partially completed structures, but where active construction work is not underway (for example around partially completed foundations or jackets substructures, completed but not commissioned WTGs etc.) and around completed structures prior to commissioning. Pre-commission safety zones will remain in place until the WTGs have been commissioned.

The status and location of safety zones within the Development Area will be promulgated on a regular basis throughout the construction period via the method set out in *Section 9* of this NSP.

In line with the guidance set out by the regulator in gaining consent for a Safety Zone, AOWFL agrees to monitor the safety zone for infringements. Infringements will be notified to Marine Scotland along with supporting evidence of the infringement (for example in the form of Automatic Identification System (AIS) data, or other supporting evidence provided by site/guard vessels).

5.6 Management of the Buoyed Construction Area (including Safety Zones)

AOWFL will appoint a MC, based in a control room in Aberdeen Harbour from where construction activities will be managed, including all communications internally and to third parties (see *Section 9*).

Movements of construction vessels around the Development Area (those engaged in construction of the EOWDC and associated traffic passing nearby) will be monitored by the MC. The MC will also monitor movements of any third party vessels and provide them with relevant information if appropriate.

The MC will obtain and provide local weather information for vessels working on the EOWDC to assist in planning the construction activities. The MC will also hold a copy of the Emergency Response and Cooperation Plan (see *Section 10*), and will be the main internal point of contact in the event of emergency incidents for AOWFL vessels.

Permission for construction vessels to enter the construction area and associated safety zones will be managed by the MC, for example by using a Permit to Work system.

The MC will establish protocols for approaching and leaving the worksite as well as management systems to record the work being undertaken and the vessels and personnel undertaking that work.

The MC will also ensure the safety of the site using appropriate methods such as guard vessels where appropriate. Systems will be in place to prevent unauthorised vessels entering the site or posing a risk to themselves or vessels engaged in the construction works.

5.7 Recommended Routes

AOWFL has identified suitable vessel transport routes (for AOWFL vessels) between the construction area and the main ports to be used. Further detail is provided in the VMP, which has been submitted for approval.

These defined routes will be used by construction vessels to ensure the risk of encounters with marine mammals and ornithological receptors is minimised. Impacts on third party vessels including commercial, recreational or fishing traffic within the vicinity of the EOWDC will be mitigated by the compliance with the International Regulations for the Prevention of Collisions at Sea (COLREGS) 1972 and effective promulgation of information via the MC. Further information on promulgation of information can be found in *Section 9*.

As per *Section 5.3.1*, during the construction phase liaison will be ongoing with Aberdeen Harbour and VTS to ensure vessel movements are appropriately managed in the Aberdeen VTS area and Aberdeen Harbour's designated anchorage. Following consultation with Aberdeen Harbour, it is not a requirement that vessels within the Development Area liaise with Aberdeen VTS unless they are proceeding inwards.

Precise entry/exit points are not required given the size of the Development, however it is noted that entry is likely to be from the east, given the presence of the Blackdog Firing

Range to the west, shallow water and mammal/ornithological receptors to the west, and the Aberdeen anchorage to the south.

5.8 Construction Vessels

AOWFL requires that all vessels involved in the construction of the EOWDC meet the required, recognised standards, and will comply with the international maritime rules (as adopted by the relevant flag state) and the relevant regulations for their class and area of operation.

AOWFL will conduct independent vessel audits on construction vessels as necessary to ensure that they meet these standards and are appropriate for the purpose of their prescribed roles.

AOWFL requires that all vessels involved in the construction of the Development will comply with the procedures set out in this document and in other relevant consent plans such as the VMP and the NMP.

Vessel crews will be required to meet the requirements for the size, type and area of operation in line with the Standards for Training, Certification and Watchkeeping set out by the International Maritime Organisation (IMO), and any site specific requirements implemented by AOWFL above minimum standards.

All vessels involved in the construction of the Development will be marked and lit as per the COLREGs 1972, and in accordance with the UK Standard Marking Schedule for Offshore Installations (BEIS 2011). All construction vessels will also be equipped with AIS receivers and transmitters.

Further details of the proposed construction vessels are set out in the VMP submitted for approval. It is noted that as per Condition 3.1.2 of the Marine License, AOFWL will submit a full list of all vessels to be used during the construction phase of the Development.

5.9 Cable Laying and other Restricted in Ability to Manoeuvre Operations

RAM vessels will be utilised during cable installation works and heavy lift operations. RAM vessels are those restricted in their ability to manoeuvre as a result of the nature of the work they are undertaking, and therefore are unable to keep out of the way of an approaching vessel. All RAM vessels involved in the construction of the EOWDC will comply with the COLREGS 1972, which is the international convention regulating vessel movement. All vessels regardless of nationality are required to comply with this convention to ensure that they do not interact with vessels that are restricted in their navigational ability.

RAM vessels will display lights and shapes to indicate their restriction. They will transmit safety warnings on Very High Frequency (VHF) to inform other vessels of their actions using the ‘Sécurité’ message if the messages contain important information relevant to navigation. Communications between the RAM vessels and the MCC will be ongoing throughout their operation.

RAM vessels will comply with vessel type regulation information transmitted through AIS, and show current navigational status at all times to ensure other vessels equipped with AIS can identify that they are a vessel with restricted manoeuvrability.

Cable laying activities will be publicised through the notification procedure (see *Section 9*), and if necessary, guard vessels will be employed during the cable laying period.

6 NAVIGATIONAL SAFETY MEASURES DURING OPERATIONS AND MAINTENANCE

6.1 Introduction

The following section sets out the navigational safety measures to be implemented by AOWFL during the operational phase of the EOWDC, including details on:

- Marine Coordination;
- Operational Lighting and Marking;
- Operational safety zones;
- Recommended routes and entry/exit gates;
- Operations and maintenance vessels;
- RAM operations; and
- Subsea cable inspections.

In addition to the details listed above, all vessels will implement and maintain RAMS for all operations. All contracted vessels will also be required to comply with AOWFL's vessel procedures, including the need for audits (e.g., Common Marine Inspection Document).

6.2 Marine Coordination Centre

Operation and Maintenance (O&M) activities will be managed remotely from the MCC at the Ormonde Wind Farm. There will also be a local system in place in the AOWFL control room. The MCC will be the focus of marine activities and coordinate all communications internally and to third parties.

The MCC will establish protocols for approaching and leaving the EOWDC, and manage systems to record the work undertaken, including the vessels and personnel involved.

The MCC will ensure the safety of the site using appropriate monitoring methods, including AIS and, where necessary, guard vessels.

It will also maintain a copy of the ERCoP (Section 10) and will be the main internal point of contact for AOWFL vessels in the event of emergency incidents.

6.2.1 Liaison with Aberdeen Harbour VTS

There will be regular communication between the EOWDC MCC and Aberdeen Harbour VTS. An overall number and list of personnel on the EOWDC crew transfer vessel will be sent by email to Aberdeen Harbour VTS before departure from the harbour at the start of each shift. There will be regular communications through the EOWDC MCC to Aberdeen Harbour VTS to agree crew transfer vessel sailing times. The communication protocol between EOWDC and Aberdeen Harbour for sailing times is currently under development, to be agreed before operational activities commence. The EOWDC crew transfer vessels will be required to complete local knowledge training with Aberdeen Harbour VTS prior to the start of operational activities.

6.3 Operational Lighting and Marking

During the operational phase, the Development will be lit and marked as set out in the NMP, and as approved by the NLB. Figure 4 shows the operational lighting and marking, with a summary given in Table 5.

Following consultation with the NLB, it was agreed that buoyage was not required during the operational phase of the Development.

All WTG's designated as a Significant Peripheral Structure (SPS) will be marked with a navigational light, with range dependent on proximity to shore. Three of the WTGs will also be fitted with foghorns to provide sound warnings during periods of poor visibility, and AIS will be fitted on WTGs AWF04 and AWF09.

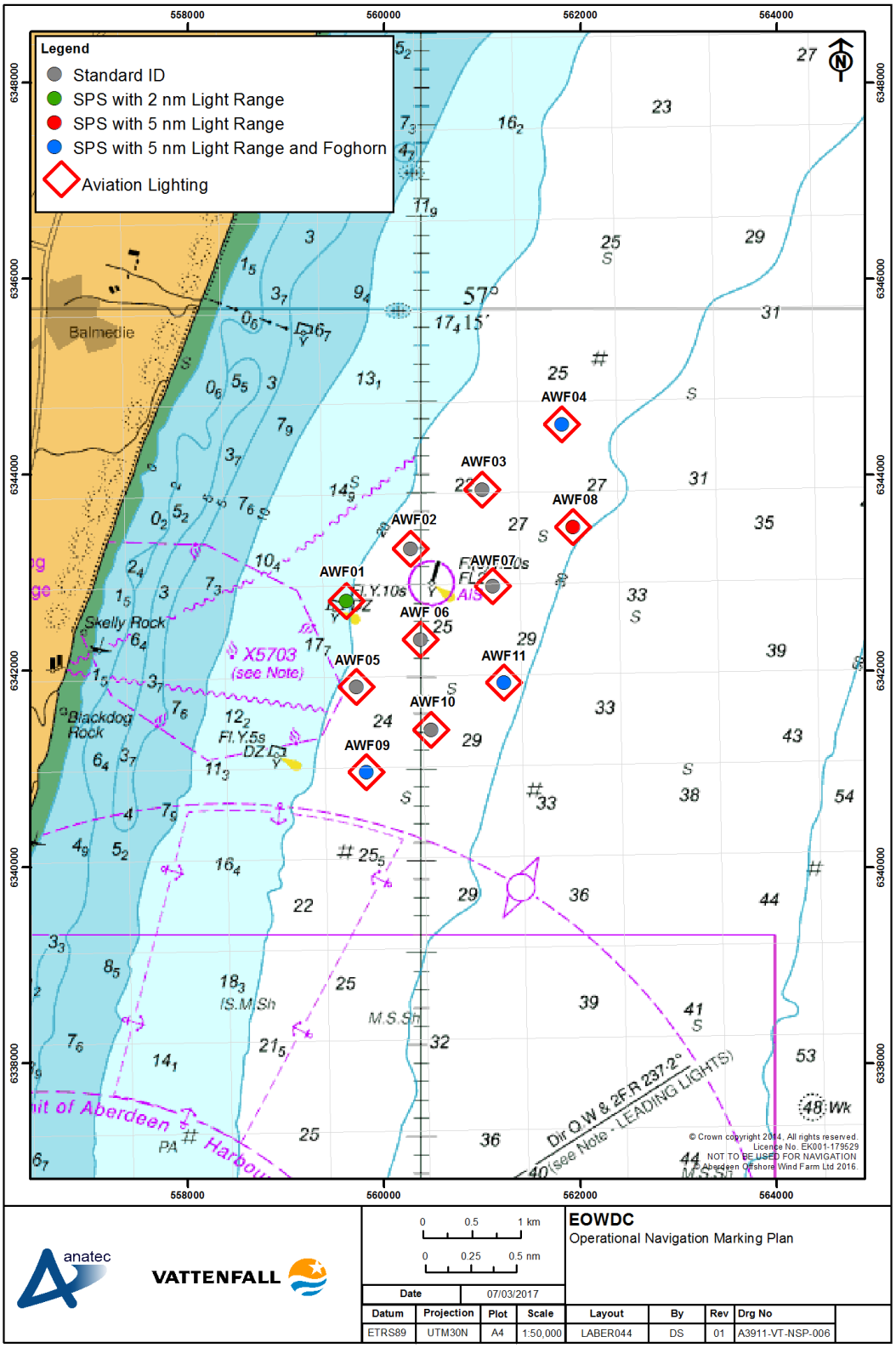
Aviation lighting will be fitted as required by the CAA and all WTGs shall be lit with a synchronised flashing red Morse Code letter 'W'.

All jacket foundations will be painted traffic yellow (RAL 1023) up to a height of 28.46 m above Highest Astronomical Tide (33.1 m above Lowest Astronomical Tide (LAT)). Above this height, structures will be painted light grey (RAL 7035). Any part of the structure that will remain below LAT at all times is not required to be painted. Each WTG will display a unique identification panel with black letters or numbers on a yellow background visible in all directions.

Table 5 – Operational Lighting and Marking

Location	Marine Lighting	Fog Horn (inc Visibility Metre)	Aviation Lighting	ID Panel	AIS Transmitter
AWF01	Yes – 1/5 second, 2 nm	No	Yes	Yes	No
AWF02	Not required	No	Yes	Yes	No
AWF03	Not required	No	Yes	Yes	No
AWF04	Yes – 1/5 second, 5 nm	Yes	Yes	Yes	Yes
AWF05	Not required	No	Yes	Yes	No
AWF06	Not required	No	Yes	Yes	No
AWF07	Not required	No	Yes	Yes	No
AWF08	Yes – 1/5 second, 5 nm	No	Yes	Yes	No
AWF09	Yes – 1/5 second, 5 nm	Yes	Yes	Yes	Yes
AWF10	Not required	No	Yes	Yes	No
AWF11	Yes – 1/5 second, 5 nm	Yes	Yes	Yes	No

Figure 4 – Operational Lighting and Marking



6.4 Operational Safety Zones

AOWFL does not currently plan on applying for routine safety zones during the operational phase of the EOWDC. However, this decision will be kept under review, and where it is considered necessary for the purposes of safe navigation, AOWFL may consider applying for 50 m “Optional” safety zones around certain structures.

AOWFL will apply for safety zones of 500 m to be applied during major maintenance work such as the replacement of a turbine blade, or during “unplanned” works, such as to repair major faults. It is envisaged that only works that would require the use of a heavy lift vessel or jack-up vessel would require the imposition of these safety zones, due to such vessels being restricted in manoeuvrability, and the general nature of these maintenance activities.

As per Marine Guidance Note (MGN) 543, in applying and gaining consent for a safety zone, AOWFL commits to monitor the zone for unlawful infringements. Any infringements will be reported to BEIS, with the supporting evidence (for example, AIS or guard vessel/construction vessel).

6.5 Recommended Routes and Entry/Exit Gates

During the operational phase, given the size of the Development, recommended routes and entry/exit gates are not considered a necessary mitigation for the purposes of navigational safety. Liaison will be ongoing with Aberdeen VTS to appropriately manage vessel movements in the VTS area as well as promulgation of information to third parties, as per *Section 9*.

6.6 Operational and Maintenance Vessels

All vessels used on site during the operational phase will be required to comply with legislation appropriate for their class and area of operation. The on-board health and safety requirements for all vessels will be required to meet the prescribed standards established by the AOWFL Safety Management System.

AOWFL will conduct independent vessel audits on operational vessels as necessary to check that they meet these standards and are appropriate for the purpose of their prescribed roles.

Vessel crews will be required to meet the requirements for the size, type and area of operation in line with the Standards for Training, Certification and Watchkeeping set out by the IMO, and any site specific requirements implemented by AOWFL above minimum standards. Operational and maintenance vessels will be marked and lit as per the COLREGs 1972, and in accordance with the UK Standard Marking Schedule for Offshore Installations (BEIS 2011). Vessels will also be installed with AIS receivers and transmitters where major maintenance or repair works are required.

6.7 Restricted in the Ability to Manoeuver Operations

RAM vessels may be used during cable maintenance, and heavy lift operations associated with the WTGs, and will comply with COLREGS 1972. They will transmit safety warnings on VHF to inform other vessels of their actions, using the 'Sécurité' message if the messages contain important safety information relevant to navigation.

Cable maintenance will be publicised through the notification procedures (see *Section 9*), and where necessary, guard vessels will be employed during the cable maintenance period.

6.8 Subsea Cable Inspections

Following installation, an assessment will be completed identifying areas of cable at potential risk of exposure in the future. Monitoring of these 'at-risk' areas will be conducted annually. Subject to the findings of the surveys, the frequency of these will be adapted. There will also be remote condition monitoring of the subsea cables via a Distributed Temperature Sensing system.

7 ANCHORING

7.1 Anchoring Areas

Identified anchoring areas in the vicinity of the EOWDC are presented in Figure 5 with further details given in Table 6. Anchorage areas have been identified using the Pilot Book (UKHO 2016), Admiralty Charts and a review of AIS data recorded in the area. It should be noted that a vessel can anchor in any water which it deems safe and where anchoring is not prohibited.

Anchoring is at the discretion of the vessel Master but can be in conjunction with information provided by the MCC or Aberdeen Harbour where relevant. Standard marine practice however requires that when a vessel proceeds to anchor, consideration is given to:

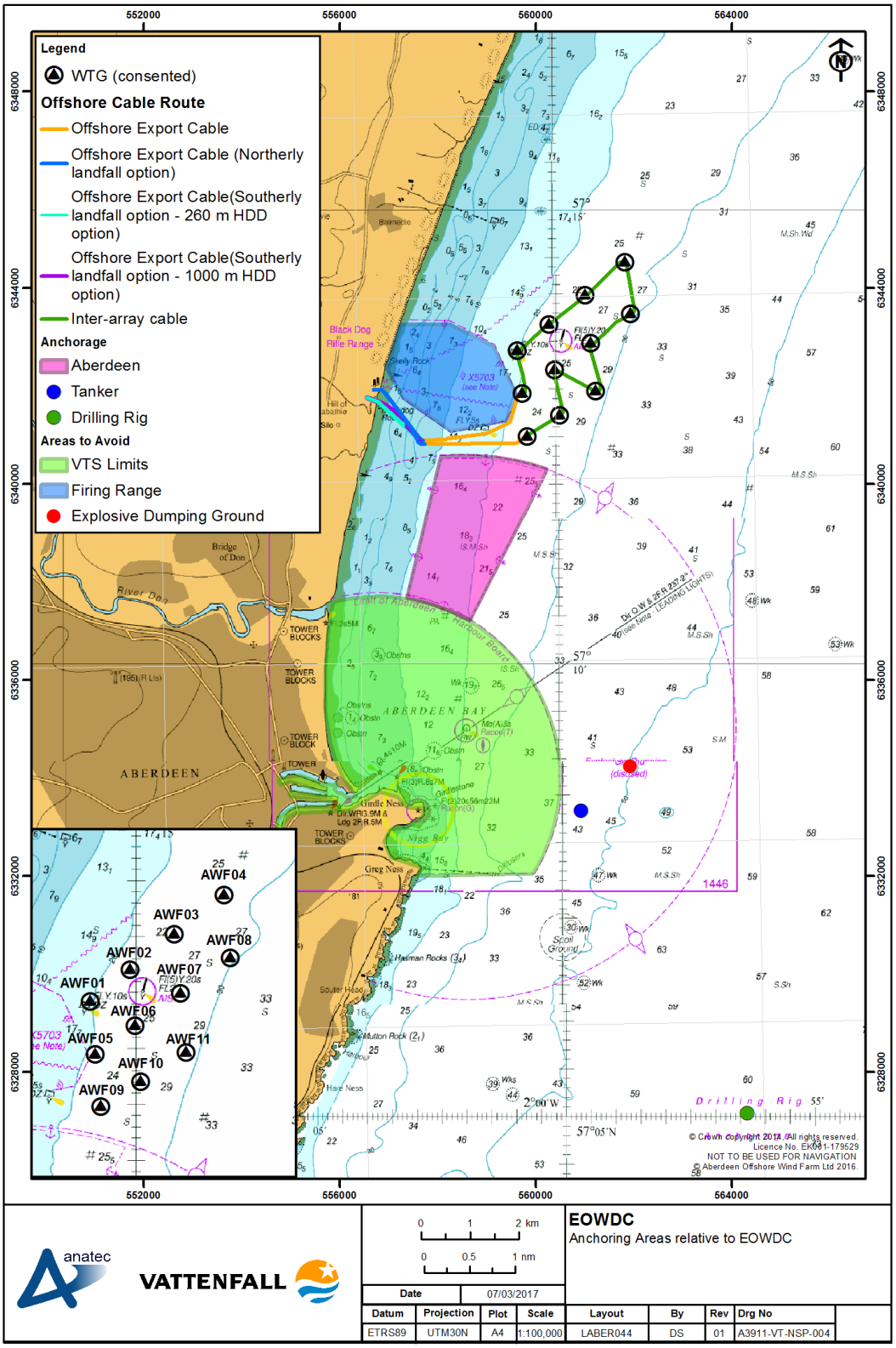
- Water depth;
- Seabed type and charted hazards including cables/pipelines;
- Weather and tidal information including current and predicted weather;
- Avoidance of prohibited anchorage areas;
- Consideration for other anchored vessels;
- Avoidance of known areas of other marine activity such as fishing or recreational boating; and
- Avoidance of main commercial routes, pilot boarding areas or other navigational features such as spoil grounds or subsea cables.

All vessels associated with the Development will take the above into consideration prior to anchoring as per standard marine practise. Construction/maintenance vessels requiring anchorage within the EOWDC will request permission to do so from the MCC.

Table 6 – Anchoring Area Summary

Anchorage	Description
Aberdeen Harbour	This anchorage was established in 2010, and is shown an Admiralty Charts. The pilot book states that: *An anchorage has been designated in Aberdeen Bay centred on 57° 11.40' N 002° 02.00' W about 3 miles NNE of the harbour entrance. It is generally free of dangers except for a foul in position 57° 12.05' N 002° 00.75' W, on a regular sandy bottom. However, the bay is exposed to E winds.*
Tanker	This is not a designated anchorage area (i.e., it is not mentioned in the Pilot Book or indicated on Admiralty Charts), however tankers unable to enter Aberdeen harbour due to their size are regularly observed anchoring here.
Drilling Rig	The location of this anchorage is indicated on Admiralty Charts, and the Pilot Book states that: *Oil rigs are frequently anchored about 5 miles SE of Greg Ness.*

Figure 5 – Anchoring Areas relative to the EOWDC



7.2 Anchorage Areas to be Avoided

The consultation undertaken to date and local knowledge has indicated the need for the following areas to be avoided (or areas that have restrictions on anchoring activities):

- Blackdog Firing Range;
- Areas within Aberdeen VTS Limits; and
- Disused explosives dumping ground (57° 08.83’ N 001° 58.59’ W).

Each of these areas is shown in Figure 5. More details with regards to the Blackdog Firing Range are provided in *Section 8*, and Table 6 gives details of anchoring within the designated anchoring area located inside the Aberdeen VTS limits.

No other specific areas to be avoided by construction and operation vessels when anchoring have been identified. Operational experience may however identify such areas and where this is the case such areas will be communicated to all relevant vessels engaged in construction or operational activity.

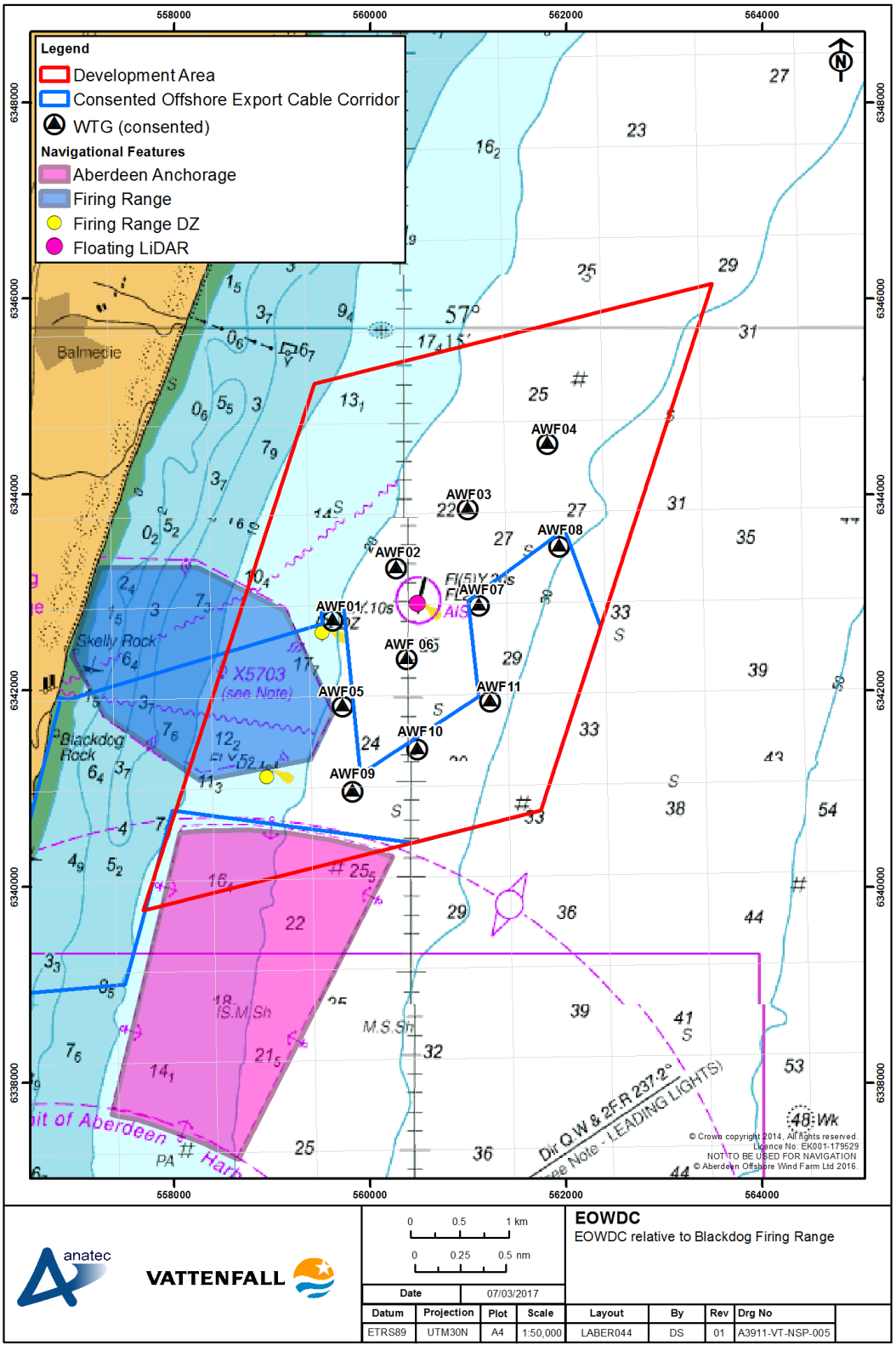
8 BLACKDOG FIRING RANGE MANAGEMENT PLAN

The EOWDC is located in close proximity to the Blackdog Firing Range (Figure 6) and Condition 10 of the S.36 Consent, required that:

Prior to the erection of any wind turbines on the Site, the Company must submit a Black Dog 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). 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. The Company must meet all costs attributable to the delivery of the Management Plan. The Company must comply with all operational procedures under the Management Plan.

A Firing Range Management Plan (ABE-ENV-DB-0013) is being developed by AOWFL, in consultation with the MOD, to manage navigational safety within the range and on approach to the range. The plan details procedures to be followed by vessels requiring entry into the Firing Range and the associated marine coordination required by AOWFL.

Figure 6 – Development Area relative to Blackdog Firing Range



9 PROMULGATION OF INFORMATION

9.1 Introduction

This section provides information on the proposed approach to distributing and issuing information including NtMs and other appropriate notifications to the relevant stakeholders and other marine users.

9.2 Local Notices to Mariners

LNtMs will be issued in advance of any activity associated with the EOWDC which may impact upon navigational safety. AOWFL will issue LNtMs to a list of relevant local and national stakeholders. This list will be regularly updated to ensure contact details remain up-to-date, and that all relevant parties are included.

The LNtMs will be concise, detailing navigational safety information and may include, but not be limited to, the information set out in Table 7. A standard template will be defined.

Table 7 – Local Notice to Mariner Content

Title	Clearly state the document is a LNtM and a short relevant title about the scope of the topic. This will include the date of issue and the notice number.
Supplementary Information	Details of the organisation and Development issuing the LNtM and any relevant LNtMs issued prior to the current one.
Detail	• Date/Time of start/finish and location of work (coordinates) • Vessels on site including call signs • Activity being undertaken • Specific risks to navigation.
Contact Details	Sufficient details to allow mariners to contact the organisation issuing the LNtM including the Marine Coordination Centre (MCC) / 24 hrs emergency contact
Guard Vessel and Safety Zone Detail	Details of any guard vessels or safety zones present and in force.
Hyperlinks to Additional Information	Provided only if absolutely necessary.

The organisations to which LNtMs will be issued to includes the United Kingdom Hydrographic Office (UKHO). Upon receipt of any LNtMs, the UKHO will decide whether to include any of the contained information in their Weekly Admiralty NtMs, as described in *Section 9.3*.

9.2.1 LNtM Issued Prior to the Commencement of the Development

AOWFL will, as soon as is reasonably practicable prior to the commencement of any construction activity, ensure that local mariners, fishermen's organisations, and HM Coastguard (Aberdeen Coastguard Operations Centre (CGOC)) are made fully aware of the Licensable Marine Activity through LNtMs (or any other appropriate means).

It is noted that, as per civil aviation requirements, AOWFL will also arrange a Notice to Airmen with the CAA at least 14 days prior to the start of construction. Full details of promulgation of information relevant to aviation are given in the NMP (ABE-ENV-BD-0009).

9.2.2 LNtM Issued during Construction

The MCC will notify the UKHO and the standard list of stakeholders as to the progress of the construction of the EOWDC. Notifiable activities include anything deemed to pose a risk to navigational safety, including any faults to navigational aids. It is also a requirement under the ERCoP to ensure the MCA are aware of what vessels are on site (and how to contact them). An LNtM template approved by the MCA to satisfy this will be held by the MCC.

9.2.3 LNtM Issued upon Commissioning and During Operation

AOWFL will ensure that local mariners, fishermen's organisations and the CGOC are made fully aware of the completion of the construction works and the commissioning of the EOWDC.

AOFWL will ensure that relevant stakeholders are informed via LNtMs of any planned and unplanned maintenance activities that are outside the day to day maintenance activities associated with the EOWDC.

9.2.4 Post Commissioning

AOWFL will, upon the completion of the EOWDC, provide the "as-built" positions and maximum heights of all WTGs, and any subsea infrastructure to the UKHO for aviation and nautical charting purposes.

9.3 Admiralty Notices to Mariners (UK Hydrographic Office)

Admiralty NtMs are issued by the UKHO and are based on the information provided within LNtM. The UKHO issues these on a weekly basis to provide physical corrections to charts and associated publications. It is the responsibility of mariners to look up the Weekly Editions of Admiralty NtMs which can be found on the UKHO website and to make any necessary corrections to the charts on board their vessel.

9.4 UK Hydrographical Charts

WTGs will be charted by the UKHO using the turbine tower or Development Area chart symbol (found in publication 'NP5011 – Symbols and Abbreviations used in Admiralty Charts') (UKHO 2011) on charts deemed appropriate in terms of scale.

Similarly, the UKHO will display the submarine cables associated with the EOWDC on charts deemed appropriately scaled.

9.5 Kingfisher Bulletins and KIS-ORCA

The Kingfisher Information Service – Offshore Renewable & Cable Awareness (KIS-ORCA) project is a joint initiative between Subsea Cables UK and Renewable UK and is being

managed by the Kingfisher Information Service of Seafish. Information is available in fortnightly bulletins (Kingfisher – Offshore and Marine Renewables) or downloadable from the KIS-ORCA website.

9.5.1 KIS-ORCA Notifications prior to Commencement of Construction

AOWFL will ensure that details of the Development are promulgated in the Kingfisher Fortnightly bulletins, as soon as is reasonably practicable prior to commencement of construction of the EOWDC, to inform the Sea Fish Industry of the vessel routes, timings, and location of the Development, and of the relevant operations.

9.5.2 KIS-ORCA Notifications during Construction

AOWFL, through the MC, will ensure that the progress of the construction of the EOWDC is promulgated in the Kingfisher Fortnightly Bulletin to inform the Sea Fish Industry of the vessel routes, the timings and location of the construction activities.

Notifications to the Kingfisher Fortnightly Bulletin may include, for example, an overview of the Development, roles and responsibilities, method statements relevant to the scope of the work for which the notification is issued, offshore activity schedule, navigational safety procedures, advisory safety zones and any relevant drawings or other Development information.

9.5.3 KIS-ORCA Notifications upon Commissioning and During Operation

AOWFL will ensure that the completion of the EOWDC is promulgated in the Kingfisher Fortnightly Bulletin to inform the Sea Fish Industry.

AOWFL will ensure notices are issued to the Kingfisher Fortnightly Bulletin detailing any planned or unplanned maintenance activities that are outside the day to day maintenance carried out at the EOWDC.

9.6 Radio Navigational Warnings

Radio Navigational Warnings may be issued if an activity or incident poses a danger to other marine users. Examples of when Radio Navigational Warnings could be issued are:

- Failures to light signals, fog signals, buoys, or other aids to navigation;
- Establishing major new aids to navigation;
- Cable laying activities, where a risk is posed to passing traffic;
- Other underwater operations that may constitute potential dangers in or near shipping lanes; or
- Vessels not under command or significant RAM operations.

Once details of an activity on site have been issued through the standard NtM process, the UKHO will then decide if the warning should be transmitted as a Radio Navigational Warning. The UKHO will then issue the navigational warning.

In the context of Radio Navigational Warnings, the UKHO act as the Navigation Area (NAVAREA) 1 (NE Atlantic) Co-ordinator for the IMO and International Hydrographic

Organisation Worldwide Navigational Warning Service and also as the United Kingdom Co-ordinator for issuing coastal navigational warnings. The MCA however is the overarching body responsible for broadcasting the warnings and are the organisation responsible for charging (costs associated) to broadcast them.

For information, the broadcasts are under the control of the UKHO and tend to be made as follows:

- For vessels in NAVAREA 1, broadcasts are made through Enchanced Group Call Safety NET within 30 minutes of receiving the navigational warning or at the next scheduled broadcast (every 12 hours);
- Broadcast by Navigational Telex (Navtex) twice a day as UK Coastal Navigational Warnings by appropriate Navtex stations at each transmission time (every four hours), or upon receipt of the information if it is of a vital nature; and
- Broadcast by VHF or Medium Frequency radio from selected MCA stations at the next scheduled broadcast and every 12 hours thereafter.

As per the NMP, AIS will be installed on WTGs AWF04 and AWF09. AIS may also be installed on the construction buoyage, however this is still under consideration. AOWFL will seek relevant licenses from Office of Communications (OFCOM) in advance of the use of any AIS.

10 EMERGENCY RESPONSE

10.1 Introduction

This section sets out the key emergency and incident planning and reporting procedures to be followed during all phases of the EOWDC.

10.2 Emergency Response Plan

AOWFL has prepared an Emergency Response Plan (ERP) (ABE-HSS-QB-0004) in accordance with AOWFL's Safety, Health and Environmental Management System. The ERP details the required emergency planning and response control measures to be implemented across the Construction and Operational phases of the EOWDC by all AOWFL Personnel Contractors and Subcontractors.

Procedures are set out in the ERP against a number of emergency scenarios to ensure the following provisions are in place in the event of an incident:

- Define how emergencies are reported from where they occur, the local action required, the involvement of the emergency services and what roles and responsibilities are taken up and by who;
- Explain how the different levels of command & control are carried out;
- Standardise the way that responses are carried out in the event of an emergency including emergency command centre facilities;
- Form a sound basis for training people (including Contractors and Subcontractors) within their level of command & control;
- Provide a constructive information tool to help people understand their role and responsibilities during an incident; and,
- Ensure compliance with safety, health and environmental legislation.

10.3 Emergency Response Co-operation Plan

AOWFL has also prepared a full ERCoP (ABE-HSS-QB-0045) for the EOWDC, which has been issued to the MCA for consultation.

The ERCoP includes the following information:

- Emergency contact and quick reference information
- EOWDC information including site location, coordinates and site control measures;
- Roles and responsibilities of AOWFL in an emergency;
- AOWFL contact information;
- Emergency response team;
- Liaison arrangements and information exchange;
- Development design parameters relevant to emergency response;
- Construction activities;
- Search and Rescue (SAR) facilities and SAR response capabilities including cumulative capabilities;

- Medical advice and assistance;
- Firefighting, chemical hazards, trapped persons etc;
- Shore reception arrangements;
- Suspension/ termination of SAR action;
- Criminal action and accidents to persons;
- Media relations;
- Exercises;
- Unexploded ordnance and wreck materials located on or near to an OREI;
- Wreck or wreck materials;
- Counter pollution;
- Search Planning; and,
- Liaison.

10.4 Marine Incident Reporting

In relation to health, safety or environmental incidents, an incident reporting process is set out in the approved ERP which will be followed by all vessels and personnel. This sets out the reporting process to be followed and the roles and responsibilities in relation to incident reporting and management.

Matters relating to emergency response, including the reporting of any such incidents are set out in the ERCoP (see *Section 10.3* above).

10.5 UK Marine Reporting Requirements

In addition, within UK waters, all vessels are required to report any incidents related to navigational safety by the quickest means possible to the Marine Accident Investigation Branch (MAIB). The MAIB has a dedicated reporting line for this purpose (+44 (0)23 8023 2527), which is staffed 24 hours a day. This includes all accidents and serious injuries.

Information required will include:

- Details of the incident;
- Details of the vessel(s) involved; and
- Details of personnel involved.

It is noted that it is the vessel (or vessel operators) responsibility to report any incident they are involved in or witness. However, AOWFL (via the MC) will log details of all incidents internally, and will cooperate fully with any subsequent investigations by the MAIB.

11 COMPLIANCE WITH APPLICATION AND SEIS

11.1 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."*

Section 11.2 sets out baseline assumptions made in the Navigation Risk Assessment (NRA) (and hence the ES and SEIS), and shows compliance with the current corresponding parameters.

Section 11.3 restates AOWFL's commitment to delivering the mitigation relevant to navigational safety, as stated in the ES and SEIS.

11.2 Compliance with the Rochdale Envelope

Throughout the NRA process (as summarised in the ES) all relevant parameters for the Development were assessed using the worst case scenario identified from the design envelope used in the consents process. The parameters used in the NRA, where relevant, have been compared during the development of this NSP. This has ensured that that this NSP is compliant with the original application and all relevant safety factors have been considered. It is noted that the current turbine layout represents an update to that used in the NRA, however the number of turbines remains unchanged (11), and the minor difference in positions is considered insignificant in terms of navigational safety.

11.3 Delivery of Mitigation Proposed in the ES

The ES and SEIS detailed a number of mitigation commitments relevant to navigational safety. *Appendix B* sets out each commitment, and states where it has been addressed within this NSP (or how/where it has been addressed if not specifically covered in this NSP).

12 REFERENCES

The Air Navigation Order 2016. Statutory Instruments 2016 No.765.

CAA (2013) CAP 764 – Policy and Guidelines on Wind Turbines. International Association of Lighthouse Authorities (IALA 2013). *O-139 – The Marking of Man-Made Offshore Structures*. December 2013.

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

Maritime and Coastguard Agency *(MCA) (2016), Marine Guidance Note (MGN) 543: Offshore renewable energy installations (OREIs): guidance on UK navigational practice, safety and emergency response. Available online:*

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/502021/MGN_543.pdf [accessed 19/09/16].

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

(UKHO 2012) United Kingdom Hydrographic Office. Symbols and Abbreviations used on Admiralty Paper Charts. NP5011, Fifth Edition. 2011.

The Electricity (Offshore Generating Stations) *(Safety Zones) (Application Procedures and Control of Access) Regulations 2007, Available online.*

http://www.legislation.gov.uk/uksi/2007/1948/contents/made (accessed 20/01/15).

APPENDIX A – LEGISLATION, POLICY AND GUIDANCE

The following relevant legislation, policy and guidance regarding the safe navigation at sea is applicable to this NSP:

- United Nations Conventions on the Law of the Sea;
- International Regulations for Preventing Collisions and Sea 1972 (COLREGS);
- Safety of Life at Sea (SOLAS) Convention, as implemented in the UK through The Merchant Shipping (Safety of Navigation) Regulations 2002;
- International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1995, implemented through the Merchant Shipping (Training and Certification) Regulations 1997 (as amended);
- International Convention for the Prevention of Pollution from Ships (MARPOL) (1973/1978);
- Merchant Shipping Act (1995);
- The Construction (Design and Management) Regulations 2015 (the CDM Regulations);
- MCA (2016) MGN 543 M+F Offshore Renewable Energy Installations (OREIs) - Guidance on UK Navigational Practices. Safety and Emergency Response Issues;
- MCA (2008b) MGN 372 M+F Offshore Renewable Energy Installations (OREIs) Guidance to Mariners Operating in the Vicinity of UK OREIs;
- DECC/BEIS (2011), Guidance Notes - Applying for Safety Zones Around Offshore Renewable Energy Installations;
- International Association of Marine Aids to Navigation and Lighthouses (IALA) Recommendations 0-139 (The Marking of Man-Made Offshore Structures, Edition 2) (IALA, 2013);
- The Air Navigation Order 2016. Statutory Instruments 2016 No.765
- CAA (2013) CAP 764 – Policy and Guidelines on Wind Turbines.

APPENDIX B – COMPLIANCE WITH ES/SEIS MITIGATION MEASURES

Table B1 presents the commitments made by AOWFL in the ES and associated SEIS to mitigation measures relative to navigational safety.

Table B1 – ES Commitments relevant to Shipping and Navigation

Source and Reference	Details of Commitment	Implementation
ES, Description of the Proposed Project	The Applicant will request advisory safety zones or apply to the Secretary of State for Trade and Industry for a temporary offshore construction safety zone under Section 95 of the Energy Act 2004. The purpose of this zone is to protect the safety of project plant and personnel, and the safety of third parties during the construction and commissioning phases of the wind farm.	As described in *Section 5.5* of this NSP, AOWFL will submit a Safety Case Application (ABE-ENV-QB-0015) to Marine Scotland.
ES, Ornithology	Minimise vessel movements and use existing shipping routes as far as practicable. It is noted that while this mitigation is specifically for the purpose of minimising ornithological impacts, it also provides benefit to navigational safety.	The MC will be responsible for coordinating vessel movements during the construction and operational phases of the EOWDC, as set out in *Section 5.3*. This includes monitoring activity to ensure unnecessary vessel movements are avoided. The recommended routes[3] for use by construction vessels (see *Section 5.7*) have been created based on existing shipping routes as far as is practicable.
ES, Shipping and Navigation	EOWDC would be charted by the UK Hydrographic Office using the magenta turbine tower chart symbol found in publication "NP 5011 - Symbols and Abbreviations used in Admiralty Charts". Submarine cables associated with the project would also be charted on the appropriate scale charts.	As described in *Section 9.4*, details of the EOWDC will be provided to the UKHO via LNtM, who will then chart all relevant information onto those charts deemed appropriate in terms of scale.
ES, Shipping and Navigation	Appropriate liaison to ensure information on the wind farm and special activities is circulated in Notices to Mariners, Navigation Information Broadcasts and other appropriate media.	As per *Section 9* of this document, information will be promulgated by the MC to the required list of recipients.
ES, Shipping and	Structures to be marked and lit in-line with Northern Lighthouse Board and International	WTGs will be lit and marked as per the requirements of the MCA,

[3] It is noted that indicative transit corridor routes are required for the purposes of mitigating impacts on marine mammal and ornithological receptors, however the requirements for site vessels to comply with the COLREGS 1972 shall remain the key navigational priority.

Source and Reference	Details of Commitment	Implementation
Navigation	Association of Marine Aids to Navigation and Lighthouses (IALA) guidance.	NLB, Ministry of Defence (MOD) and CAA, as detailed within the NMP (ABE-ENV-BD-0009). A summary of lighting and marking is also provided in *Section 5.2* and *5.4* (construction) and *Section 6.3* (operation) of this NSP.
ES, Shipping and Navigation	Lowest point of rotor sweep at least 22 m above Mean High Water Springs as per Royal Yachting Association (RYA) and MCA recommendations.	Lowest point of rotor sweep will be at least 22 m above Mean High Water Springs (MHWS).
ES, Shipping and Navigation	Cables to be buried to suitable depth based on cable protection study taking into account fishing and anchoring practices in Aberdeen Bay. Periodic inspection of the cable to ensure it remains buried. Positions of cable routes notified to Kingfisher Information Services (KIS) for inclusion in cable awareness charts and plotters for the fishing industry.	Cables will be buried to a suitable depth. Periods inspections will also be undertaken to ensure it remains buried. Information on cable burial and protection is contained within the Cable Laying Strategy (ABE-ENV-DB-0003). AOWFL will ensure that details of the Development are promulgated in the Kingfisher Fortnightly bulletins. This will include positions of cable routes.
ES, Shipping and Navigation	Compliance with MCA's Marine Guidance Note (MGN) 371 including Annex 5. Annex 5 specifies "Standards and procedures for generator shutdown and other operational requirements in the event of a search and rescue, counter pollution or salvage incident in or around an OREI."	AOWFL will ensure the EOWDC is compliant with MGN 543 (which replaced MGN 371 in 2016), including the OREI Search and Rescue (SAR) Requirements annex (which corresponds to Annex 5 of MGN 371).
ES, Shipping and Navigation	Formulation of an ERCoP as per the MCA Template.	An ERCoP (ABE-HSS-QB-0045) has been prepared and submitted to the MCA for consultation. This document will be a live document and will be updated as the Development progresses. It will be in place prior to the Commencement of the Works and will be controlled by the MC.
ES, Ministry of Defence	Agreement of operational procedures to allow vessel access to the Blackdog Firing Range to ensure that firing range activities are not compromised, and to ensure the safety of AOWFL associated vessels/crew/personnel	As set out in *Section 8*, a Blackdog Firing Range Management Plan (ABE-ENV-DB-0013) is been prepared, the contents of which will be agreed with the MOD prior to the deployment of the WTGs.
ES, Commercial Fisheries	Implementation and adherence to standard offshore safety procedures. Involvement of the Scottish Fishermen's Federation (SFF) for liaison and information distribution	Promulgation of information is covered in *Section 9* of this NSP. This will include distribution of information to all fishing parties identified as relevant, including the SFF. As set out in *Sections 5.8* and *6.7*, AOWFL will require that all

Source and Reference	Details of Commitment	Implementation
		vessels involved in the construction or operation of the EOWDC meet the required, recognised standards and will comply with the international maritime rules (as adopted by the relevant flag state) and the relevant regulations for their class and area of operation.
SEIS, Ornithological Baseline and Impact Assessment Addendum	A VMP will be created to ensure vessel movements associated with the Development are appropriately managed. It is noted that while this mitigation is specifically for the purpose of minimising impact to marine mammals, it also provides benefit to navigational safety.	The VMP (ABE-ENV-BD-0006) sets out vessel management plans to be followed by vessels associated with AOWFL during the construction and operational phases of the EOWDC.