

SHEPD

Pentland Firth East (3) Cable Replacement

Offshore Construction Environmental Management Plan



P2577_R5879_Rev2 | 18 November 2022

DOCUMENT RELEASE FORM

SHEPD

P2577_R5879_Rev2

Pentland Firth East (3) Cable Replacement

Offshore Construction Environmental Management Plan

Authors

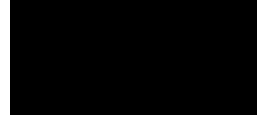
Matthew Peden

Project Manager



Matthew Peden

Authoriser



Eric Houston

Rev No	Date	Reason	Author	Checker	Authoriser
Rev 0	27/09/2022	First draft	MP	LH	LH
Rev 1	07/11/2022	Final	MP	VF	LH
Rev 2	18/11/2022	Contractor comments addressed	MP	EH	EH

Intertek Energy & Water Consultancy Services is the trading name of Metoc Ltd, a member of the Intertek group of companies.

CONTENTS

	DOCUMENT RELEASE FORM	I
	GLOSSARY	V
1	INTRODUCTION	1
1.1	Background	1
1.2	Objectives of this Document	1
1.3	Offshore CEMP Document Management	2
1.4	Linkages with Other Documents	2
2	ENVIRONMENTAL MANAGEMENT MEASURES	3
2.1	Overview	3
3	ENVIRONMENTAL MANAGEMENT FRAMEWORK	14
3.1	Introduction	14
3.2	Offshore CEMP Roles and Responsibilities and Chain of Command	14
3.3	Contractor Staff Competence, Training and Awareness	19
3.4	Project inductions	19
3.5	Toolbox talks	19
3.6	Vessel notice boards/awareness materials	19
3.7	Offshore CEMP Communications and Reporting	20
3.8	External communications	20
4	MARINE MAMMAL PROTECTION PLAN	23
4.1	Overview	23
4.2	Marine Mammal Protection Plan (MMPP)	23
5	MARINE ARCHAEOLOGY MANAGEMENT PLAN	25
5.1	Overview	25
5.2	Archaeology and cultural heritage plan management plan	25
6	INVASIVE NON-NATIVE MARINE SPECIES PLAN	26
6.1	Overview	26
6.2	Regulatory requirements	26
6.3	Invasive Non-Native Marine Species Management Plan	26

7	WASTE MANAGEMENT PLAN	28
7.1	Overview	28
7.2	Waste management plan	28
8	POLLUTION PREVENTION, SPILL RESPONSE AND CONTINGENCY PLAN	31
8.1	Overview	31
8.2	Emergency Spill Response	31
8.3	Monitoring and Record Keeping	31
8.4	Pollution Prevention Measures Onshore (At Cable Landfall)	32
9	MONITORING AND REPORTING PLAN	33
9.1	Introduction	33
9.2	Monitoring during cable installation	33
9.3	Reporting During / After Installation	35
9.4	Incident Response and Reporting	35
	REFERENCES	36
APPENDIX A	Marine Licence	A-1
APPENDIX B	EPS Licence and Basking Shark Licence	B-1
APPENDIX C	Codes of Conduct	C-1

LIST OF TABLES AND FIGURES

Tables

Table 1-1	Supporting documents	2
Table 2-1	Environmental Management Measures	4
Table 3-1	Roles and responsibilities	15
Table 3-2	Required returns and notifications	20
Table 9-1	Vessel Audit – Environmental Compliance Checklist	33

GLOSSARY

ACoW

Archaeology Clerk of Works

AIS

Automatic Identification Systems

BWM

Ballast Water Management

BWMP

Ballast Water Management Plan

CFLO

Companies Fisheries Liaison Officer

CEMP

Construction Environment Management Plan

COSHH

Control Of Substances Hazardous to Health

CPP

Construction Phase Plan

DDV

Drop Down Video

DPR

Daily Project Report

ECoW

Ecological Clerk of Works

EPS

European Protected Species

EPS RA

European Protected Species Risk Assessment

ESI

Environmental Supporting Information

EU

European Union

FIR

Fishing Industry Representative

FLMAP

Fisheries Liaison Mitigation Action Plan

IMO

International Maritime Organisation

INNMS

Invasive Non-Native Marine Species

JNCC

Joint Nature Conservation Committee

MARPOL

International Convention for the Prevention of Pollution from Ships / Maritime Pollution

MCS

Marine Conservation Society

MGN

Marine Guidance Notice

MGO

Marine Gas Oil

MHWS

Mean High Water Spring

MMO

Marine Mammal Observer

MMPP

Marine Mammal Protection Plan

MSDS

Material Safety Data Sheets

MS-LOT

Marine Scotland - Licensing Operations Team

Nm

Nautical mile

NRA

Navigational Risk Assessment

PAD

Protocol for Archaeological Discoveries

PAM

Passive Acoustic Monitoring

PFE

Pentland Firth East

ROV

Remotely Operated Vehicle

RQHSE

Risk, Quality, Health, Safety and Environment

SAC

Special Area of Conservation

SBP

Sub-Bottom Profiler

SEPA

Scottish Environmental Protection Agency

SHE

Safety, Health and Environment

SHEPD

Scottish Hydro Electric Power Distribution plc

SOP

Standard Operating Procedures

SOLAS

Safety Of Life At Sea

SOPEP

Shipboard Oil Pollution Emergency Plan

SPA

Special Protection Area

SSEN

Scottish and Southern Electricity Networks

SWCN

Special Waste Consignment Note

UAV

Unmanned Aerial Vehicle

UK

United Kingdom

UKHO

United Kingdom Home Office

WTN

Waste Transfer Note

1 INTRODUCTION

1.1 Background

Scottish and Southern Electricity Networks (SSEN) operating under licence as Scottish Hydro Electric Power Distribution plc (SHEPD, known as the *Employer*) is responsible for monitoring and maintaining the efficiency and integrity of the subsea electricity cable networks which provide power supplies to 60 Scottish islands.

Two cables (Pentland Firth East and Pentland Firth West) connect Orkney to the Scottish mainland via the island of Hoy. Both cables make landfall at Murkle Bay on the Scottish Mainland and Rackwick Bay on Hoy. The Pentland Firth East (1) cable was identified as being in critical condition and replaced in 2020, however, a fault has since developed on the 2020 replacement cable (PFE (2)) and it has been determined a new cable will be required to ensure security of supply. At present the previously de-energised Pentland Firth East (1) cable has been reconnected pending installation of the new Pentland Firth East (3) cable. It is proposed that the Pentland Firth East (2) cable installed in 2020 will be decommissioned in as far as this is required in order to facilitate installation of the new Pentland Firth East (3) cable. SHEPD are applying to Marine Scotland for a marine licence to carry out these works.

This offshore Construction Environment Management Plan (CEMP) is for the installation phase of Pentland Firth East (3) 33kV submarine electricity cable between Rackwick Bay on the island of Hoy and Murkle Bay on the Scottish Mainland (the Project) by SHEPD. The installation operations will be undertaken by Jan De Nul Luxembourg S.A. (known as the *Contractor*).

This offshore CEMP sets out the proposed environmental management framework and procedures that will be followed by the *Contractor* during the installation of the cable. It covers all potential effects associated with installation of the cable and all works at the landfall occurring below Mean High Water Springs (MHWS). Given that the cable will be installed across the shore, management of potential impacts on the shore have also been considered or have been referenced to the separate onshore CEMPs. The mitigation measures that are incorporated in the design of the cable in order to prevent or reduce adverse environmental effects as much as possible are discussed separately as part of the Environmental Supporting Information (ESI) Report (Document reference 2577_5892).

1.2 Objectives of this Document

The purpose of this offshore CEMP is to provide the over-arching framework for environmental management during the installation of the replacement subsea cable. It sets out the principles that will be applied by the *Contractor* in implementing their environmental management plans. The works will be undertaken considering the following:

- Relevant legislation as outlined in supporting ESI Report;
- Relevant policies in the Scottish Marine Plan and Pilot Pentland Firth and Orkney Waters Marine Spatial Plan;
- Findings of the assessments undertaken to support the Marine Licence application;
- Any conditions established through the Marine Licence and other relevant licences including the European Protected Species (EPS) Licence and Basking Shark Licence;
- SHEPD policies and procedures:
 - Group Sustainability Policy (PO-GRP-016)
 - Group Climate Change Policy (PO-GRP-001)
 - Group Safety and Health Policy (PO-GRP-015)

- Group Safety and Health Policy Summary (PO-SHE-001)
- Minimum SHE Requirements for Contracts (SP-SHE-009-001)
- Group Environment Policy (PO-GRP-007).

1.3 Offshore CEMP Document Management

The offshore CEMP will be a controlled document and will be formally issued to the *Contractor's* cable installation team. Live copies of the CEMP will be held at the following locations:

- *Contractor's* project office;
- At the premises of any agent of the *Contractor* acting on behalf of the *Contractor*;
- All site offices dealing with marine operations;
- Onboard all principal construction vessels involved in offshore activities;
- With the *Contractor's* Marine Consents Manager.

The *Contractor* will provide the *Employer* with the most up to date copy of the offshore CEMP and is responsible for maintaining the register of document versions and issue dates.

1.4 Linkages with Other Documents

This offshore CEMP document sets out the proposed overarching environmental management framework to be applied during the Project and forms part of a suite of approved documents that were prepared to inform the Marine Licence application and inform the framework for environmental management of the Project.

Table 1-1 Supporting documents

Document	Document Reference
Project Description	Intertek Document Reference P2577_R5826
Environmental Supporting Information (ESI) Report	Intertek Document Reference P2577_R5892
Fishing Liaison and Mitigation Action Plan (FLMAP)	SHEPD Document Reference Fishing Liaison Mitigation Action Plan for Pentland East and Hoy (FLMAP)
Navigational Risk Assessment (NRA)	Intertek Document Reference P2577_R5880
European Protected Species (EPS) Risk and Protected Sites and Species Assessment	Intertek Document Reference P2577_R5892 Appendix C
Onshore CEMP	Murkle Bay – ERM, 2019a Rackwick Bay – ERM, 2019b
Marine Licence	[reference to be inserted when received] (see Appendix A)
EPS Licence	Previous Licence - MS EPS 07 2019 1* (see Appendix B)
Basking Shark Licence	Previous Licence - MS BS 01 2019 1* (see Appendix A)

***Note:** New licences covering the period will be applied for, this section to be updated when new licences are granted.

2 ENVIRONMENTAL MANAGEMENT MEASURES

2.1 Overview

The environmental management measures to be implemented for the offshore installation phase of the Pentland Firth East subsea cable replacement (offshore CEMP requirements) are outlined in Table 2-1. The measures listed have been combined together in a single location to allow the *Contractor* to check and record compliance against the various management measures, mitigation measures and consent conditions (including best practice requirements) as outlined in the supporting FLMAP, NRA, ESI Report Mitigation Summary, Marine Licence (when received), EPS licence and Basking Shark Licence.

Measures have been given a specific ID to identify the Project document the measure has originated from as follows:

- ESI – Environmental Supporting Information Report;
- FLMAP – Fisheries Liaison Mitigation Action Plan;
- NRA – Navigational Risk Assessment (COMP – Compliance; BP – Best Practice);
- EPSRA – EPS Risk and Protected Sites and Species Assessment;
- ML – Marine Licence;
- EPSL – EPS Licence; and
- BSL – Basking Shark Licence.

Prior to the start of installation activities these measures will be reviewed, and as appropriate additional detail will be provided on their implementation.

This section should be read in conjunction with the Monitoring and Reporting Plan provided in Section 9 of this offshore CEMP which describes the monitoring (including auditing) and reporting activities that need to be performed during the execution of the Project.

Table 2-1 Environmental Management Measures

Environmental Aspects	Ref	CEMP Requirement	Project Phase (Pre-lay survey, Installation, Post-lay survey)	Responsibility	Date completed/ reviewed or checked [HOLD: to be completed through works]	Relevant Reference/ Evidence [HOLD: to be completed through works]	Comment/ Ongoing actions required [HOLD: to be completed through works]
Seabed, Benthic and Intertidal Ecology							
Seabed, Benthic and Intertidal Ecology	ESI 1	Micro-routing will be used to avoid sensitive species/habitats. Rock bags, Uraduct, grout bags and concrete mattresses deployment will be minimised in areas identified as potential Annex I reef habitat and the footprint of the deposits will be the minimum required to ensure cable safety and stability.	Installation	Contractor Environmental Manager and Offshore Manager			
Marine Mammals							
Marine Mammal Protection Plan	CEMP 1	All works will be undertaken in accordance with the Marine Mammal Protection Plan (see Section 4 of this offshore CEMP).	All phases of works	Contractor Environmental Manager			
Marine mammal monitoring Use of Marine Mammal Observer(s)	EPSRA 1 & 2	There will be MMO coverage for the duration of Sub-Bottom Profiler (SBP) survey activities. During daylight hours the MMO(s) will observe the sea for the presence of marine mammals and basking sharks and will have the power to delay and / or halt work activities should an individual of these species be sighted within 500m of the activities (100m when avoiding critical delays).	Pre-lay survey Post-lay survey	Marine Mammal Observer (By notifying Offshore Manager)			
Cetacean and seal mitigation zone	EPSRA 5	Should any cetaceans or seals be detected within 500m of the vessel prior to the commencement of geophysical surveys (or after breaks in geophysical survey activity of more than 10 minutes), operations will be delayed until their passage, or the transit of the vessel, results in the cetaceans or seals being more than 500 m away from the vessel	Pre-lay survey Post-lay survey	Marine Mammal Observer (By notifying Offshore Manager)			
Soft-start	EPSRA 7	SBP power will be built up slowly over at least 20 minutes to give any cetaceans, seals or basking sharks adequate time to leave the area. Build-	All phases of works	Offshore Manager			

Environmental Aspects	Ref	CEMP Requirement	Project Phase (Pre-lay survey, Installation, Post-lay survey)	Responsibility	Date completed/ reviewed or checked [HOLD: to be completed through works]	Relevant Reference/ Evidence [HOLD: to be completed through works]	Comment/ Ongoing actions required [HOLD: to be completed through works]
		up of power will occur in uniform stages to provide a constant 'ramp-up' in amplitude.					
Passive Acoustic Monitoring (PAM)	EPSRA 8	PAM will be used (when the SBP is operational) by a qualified MMO/PAM operator in times of poor visibility (e.g. fog) and low light levels during survey activities deemed as having the potential to have an adverse effect on marine mammals, as assessed within the EPS RA.	Pre-lay survey Post-lay survey	Marine Mammal Observer / PAM operator			
Standardised reporting	EPSRA 10	All recordings of cetaceans, seals and basking sharks recorded during SBP surveys will be made using JNCC Standard Forms. Reports are to be provided to the Employer within 4 weeks of survey work completion. A monitoring report detailing the features of interest recorded, methods used to detect them, and details of any problems encountered during SBP surveys will be submitted to Marine Scotland and NatureScot at the end of operations.	Pre-lay survey Post-lay survey	Marine Mammal Observer			
Basking shark							
Basking shark mitigation zone	EPSRA 4	During SBP survey works, the MMO will monitor for the presence of basking sharks, in addition to marine mammals, and will delay start of the works if any are seen within 500 m of the installation vessel.	Pre-lay survey Post-lay survey	Marine Mammal Observer (By notifying Offshore Manager)			
Slow moving installation vessel	EPSRA 11	The installation vessel will be moving at a maximum speed of 4 knots to allow any basking sharks time to move away from the vessel. Should a basking shark be found to be in the direct way of the vessel, the vessel will slow down further or, if possible, alter course to avoid collision.	Installation	Offshore Manager			
Toolbox talks	EPSRA 12	Installation vessel crew will be made aware of all protected species within the marine environment through the following guidance; the Marine Conservation Society (MCS) Basking Shark Code of Conduct and good practice measures for boat control near basking sharks and the Scottish Marine Wildlife Watching Code and Guide to Best Practice for Watching Marine Wildlife.	All phases of works	Contractor Environmental Manager			

Environmental Aspects	Ref	CEMP Requirement	Project Phase (Pre-lay survey, Installation, Post-lay survey)	Responsibility	Date completed/ reviewed or checked [HOLD: to be completed through works]	Relevant Reference/ Evidence [HOLD: to be completed through works]	Comment/ Ongoing actions required [HOLD: to be completed through works]
Otter							
Otter survey	EPSRA 14	A pre-installation survey at the cable landfalls will be conducted at least two months prior to works commencing. This survey will be followed up with a walkover survey immediately prior to works commencing. An ECoW will be responsible for the otter survey and for advising appropriate mitigation measures, which will be detailed in the relevant onshore CEMPS and SSEN Otter SPP, as required. If an otter shelter is discovered at the landfall nearshore areas, a protection zone with a minimum of 30m radius will be set up and will be clearly demarcated/fenced off.	Pre-lay survey	Marine Consents Manager (Employer)			
Otter monitoring	EPSRA 15	There will be MMO coverage for the duration of SBP survey activities, with adequately trained and experienced MMO(s) working standard 12-hour shifts, as required.	All phases of works	Marine Mammal Observer			
Seabirds							
Rafting seabirds	EPSRA 16	The installation vessels will be moving at a maximum speed of 4 knots to allow any rafting seabirds time to move away from the vessel should they be disturbed by the vessel presence.	All phases of works	Contractor Environmental Manager			
Breeding birds	EPSRA 17	When within an SPA which has been designated for breeding birds that may nest or feed in close proximity to the installation corridor or the landfall, further consultation will be undertaken with NatureScot and RSPB on the requirement for any seasonal restriction to be implemented for cable installation in order to avoid disturbance to qualifying species.	All phases of works	Contractor Environmental Manager			
Light disturbance	EPSRA 18	When within an SPA and where there is potential for 24-hour working, lighting on-board the cable installation vessel(s) will be kept to the minimum level required to ensure safe operations and lights will be directed or shielded to prevent upward illumination and minimise disturbance.	All phases of works	Contractor Environmental Manager			
Other Marine Users							

Environmental Aspects	Ref	CEMP Requirement	Project Phase (Pre-lay survey, Installation, Post-lay survey)	Responsibility	Date completed/ reviewed or checked [HOLD: to be completed through works]	Relevant Reference/ Evidence [HOLD: to be completed through works]	Comment/ Ongoing actions required [HOLD: to be completed through works]
Stakeholder engagement	FLMAP 1	Continuing effective positive liaison with all interested parties through the pre-construction, construction and operational phases of the cable replacement.	All phases of works	CFLO			
Communication with sea users	FLMAP 2	Informing sea users of construction areas and planned activities through the Notice to Mariners (NTMs) and update emails from the developer and their subcontractors.	All phases of works	CFLO			
Construction Phase Plan (CPP)	FLMAP 3	Construction Phase Plan (CPP) - Provision of details of the schedule for cable lay activities to local ports, ship operators, fishermen and recreational sailing organisations.	Installation	CFLO			
Automatic Identification Systems (AIS) Tracking	FLMAP 4	The vessel has AIS as a legal requirement.	Installation	Master			
Safety zone	FLMAP 5	Implementation of safety zones (of up to 500m) around the cable lay vessel will reduce the risk of collision between the cable laying vessel and other vessels transiting the area.	Installation	Master			
Fishing Industry Representatives (FIR) and Standard operating procedures (SOP)	FLMAP 6	Should a FIR not be present on a vessel, the Fishing Gear Interaction Standard Operating Procedure (SOP) will be followed as provided in Appendix A of the FLMAP.	Installation	CFLO/FIR			
Preventing collisions	NRA-COMP 1	Project vessels will comply with the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs) – as amended, particularly with respect to the display of lights, shapes and signals.	All phases of work	Master			
Cable route circulation	NRA-COMP 2	'As-laid' co-ordinates of the cable route will be recorded and circulated to the UK Hydrographic Office (UKHO), KIS-ORCA service and any other relevant authorities. Cables will be marked on Admiralty Charts and KIS-	Installation, Post-Installation	Project Manager (Employer)			

Environmental Aspects	Ref	CEMP Requirement	Project Phase (Pre-lay survey, Installation, Post-lay survey)	Responsibility	Date completed/ reviewed or checked [HOLD: to be completed through works]	Relevant Reference/ Evidence [HOLD: to be completed through works]	Comment/ Ongoing actions required [HOLD: to be completed through works]
		ORCA charts (paper and electronic format). An update will be distributed to stakeholders following the completion of installation.					
Reduced visibility	NRA-COMP 3	Where weather reduces visibility then vessel masters shall adhere to MGN guidelines and COLREGS to prevent collisions at sea.	All phases of work	Master			
Early consultation	NRA-BP 1	Early consultation with relevant contacts to provide notification of impending activity.	Before operations commence	Project Manager (Employer)			
Notice	NRA-BP 2	Notice to Mariners will be published to inform sea users via Notices to Mariners, Kingfisher Bulletins and Maritime and Coastguard Agency (MCA) and UK Hydrographic Office (UKHO). Vessels will be requested to remain at least 500 m away from cable vessels during installation operations.	Installation	Marine Consents Manager (Employer)			
Guard vessel	NRA-BP 3	A guard vessel may be used during the installation campaign where a potential risk to the asset or danger to navigation has been identified.	Installation	Offshore Manager			
Cable protection	NRA-BP 4	To be installed as applicable along the cable route including over shallow burial areas if required.	Post-installation	Offshore Manager			
FLO	NRA-BP5	An onshore Fishing Liaison Officer (FLO) will be provided for the project. The FLO will follow the Fishing Liaison Mitigation Action Plan (FLMAP) and ensure the entire corridor is kept clear of fishing gear until all operation have been completed.	All phases of work	CFLO			
Broadcast activities	NRA-BP 6	The UKHO will be informed of installation activities in order to issue Maritime Safety Information (MSI) broadcasts as appropriate.	Installation	Marine Consents Manager (Employer)			
Avoidance over the cable	NRA-BP 7	Marine Guidance Notice (MGN) provided by the UKHO, IHO and International Convention for the Safety of Life at Sea (SOLAS) recommend that fishing vessels should avoid trawling over installed seabed infrastructure (MCA, 2021). Vessels are advised in the Mariners Handbook not to anchor or trawl within 500m of the cable.	Post-installation	Other			

Environmental Aspects	Ref	CEMP Requirement	Project Phase (Pre-lay survey, Installation, Post-lay survey)	Responsibility	Date completed/ reviewed or checked [HOLD: to be completed through works]	Relevant Reference/ Evidence [HOLD: to be completed through works]	Comment/ Ongoing actions required [HOLD: to be completed through works]
Notification of buoys	NRA-BP 8	If cables are buoyed off whilst the vessel departs the area, buoy positions will be notified to the Notice to Mariners (NTM) distribution list including Kingfisher and 500 m clearance will be requested.	Installation	Offshore Manager			
Marine Archaeology							
Marine Archaeology Management Plan	CEMP 1	All works will be undertaken in accordance with the Marine Archaeology Management Plan (see Section 5 of this offshore CEMP).	All phases of works	Contractor Environmental Manager (Communicating with Offshore Manager)			
Mitigation during installation	CEMP 2	If identified as a requirement to manage the potential for impacting unknown heritage, a PAD based on the Crown Estate's PAD reporting protocol (2014) produced by Wessex Archaeology may be implemented. The use of vessels with DP positioning systems rather than anchors will further prevent accidental impact.	All phases of works	Contractor Environmental Manager (Communicating with Offshore Manager)			
Invasive Non-Native Marine Species							
Invasive Non-Native Marine Species (INNMS) Plan	CEMP 3	All works will be undertaken in accordance with the INNMS Plan. See Section 6 of this offshore CEMP.	All phases of works	Offshore Manager			
Waste management							
Waste management	CEMP 4	All works will be undertaken in accordance with the Waste Management Plan. See Section 7 of this offshore CEMP.	All phases of works	Offshore Manager			
Pollution Prevention, Spill Response and Contingency Planning							

Environmental Aspects	Ref	CEMP Requirement	Project Phase (Pre-lay survey, Installation, Post-lay survey)	Responsibility	Date completed/ reviewed or checked [HOLD: to be completed through works]	Relevant Reference/ Evidence [HOLD: to be completed through works]	Comment/ Ongoing actions required [HOLD: to be completed through works]
Pollution Prevention, Spill Response and Contingency Planning	CEMP 5	All works will be undertaken in accordance with the Pollution Prevention, Spill Response and Contingency Plan. See Section 8 of this offshore CEMP.	All phases of works	Project Manager (Contractor)			
Environmental Monitoring and Reporting							
Monitoring and Reporting Plan		To ensure works are carried out as per legislation, consent and licence conditions and in line with the Employer requirements monitoring and reporting of activities is to be undertaken in accordance with Monitoring and Reporting Plan, including completion of the Vessel Audit – Environmental Compliance Checklist (see Section 9 of this offshore CEMP).	All phases of works	Project Manager (Contractor) & Project Manager (Employer) depending on reporting requirement.			
Marine Licence Conditions							
Marine Licence (Insert) reference number when received)	ML #	[Marine Licence Conditions to be listed below when marine licence is received.]					
	ML #						
European Protected Species (EPS) Licence and Basking Shark Licence Conditions							
EPS Licence Reference* Basking Shark Licence*	EPSL 1 BSL 1	The licensee must ensure that all licensed activities are carried out in strict accordance with the conditions listed in the current licences and in strict accordance with the mitigation and working methods proposed in the application for this licence to disturb European protected species, together with supporting information. All works must be written and carried out within the timescale given within the application.	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			

Environmental Aspects	Ref	CEMP Requirement	Project Phase (Pre-lay survey, Installation, Post-lay survey)	Responsibility	Date completed/ reviewed or checked [HOLD: to be completed through works]	Relevant Reference/ Evidence [HOLD: to be completed through works]	Comment/ Ongoing actions required [HOLD: to be completed through works]
	EPSL 2 BSL 2	The Licensee must ensure that all works are carried out in strict accordance with the EPS Risk and Protected Sites and Species Assessment.	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			
	EPSL 3 BSL 3	In the event of the licensee becoming aware that any of the information on which issue of this licence was based has changed, the Scottish Ministers must be notified as soon as reasonably practicable.	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			
	EPSL 4 BSL 4	The licensee must ensure that the Joint Nature Conservation (“JNCC”) guidelines for minimising the risk of injury to marine mammals from geophysical surveys dated August 2017 (“JNCC Guidance”) is followed at all times in connection with the undertaking of such surveys as far as it is practical to do so. These are available from the JNCC website http://jncc.defra.gov.uk/pdf/jncc_guidelines_seismicsurvey_aug2017.pdf	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			
	EPSL 5 BSL 5	The licensee must ensure that, if any aspects of the licensed activities differ from the detail submitted in the online Marine Noise Registry, a new Proposed Activity Form is completed and submitted no later than one week prior to commencement of the licensed activities.	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			

Environmental Aspects	Ref	CEMP Requirement	Project Phase (Pre-lay survey, Installation, Post-lay survey)	Responsibility	Date completed/ reviewed or checked [HOLD: to be completed through works]	Relevant Reference/ Evidence [HOLD: to be completed through works]	Comment/ Ongoing actions required [HOLD: to be completed through works]
	EPSL 6 BSL 6	The licensee must ensure that where survey equipment has the capability to undergo soft start procedure, this is implemented on every occasion survey equipment is switched on.	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			
	EPSL 7 BSL 7	Except where it is not relevant to the provisions of this licence, the licensee must ensure that the Scottish Marine Wildlife Watching code and Marine Conservation Society (MCS) Code of Conduct are adhered to at all times.	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			
	EPSL 8 BSL 8	The licensee must ensure that copies of the licence are available for inspection by any person authorised by the Scottish Ministers at the office of the licensee and at all sites where license activities are taking place.	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			
	EPSL 9 BSL 9	Any person authorised by the Scottish Ministers must be permitted to inspect the operations relating to the licence at any reasonable time. The licensee must allow appropriate assistance to facilitate inspection.	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			

Environmental Aspects	Ref	CEMP Requirement	Project Phase (Pre-lay survey, Installation, Post-lay survey)	Responsibility	Date completed/ reviewed or checked [HOLD: to be completed through works]	Relevant Reference/ Evidence [HOLD: to be completed through works]	Comment/ Ongoing actions required [HOLD: to be completed through works]
	EPSL 10 BSL 10	The licensee must, no later than one month after the expiry date of this licence, submit to the Scottish Ministers a written report detailing all actions taken in accordance with the specified terms and conditions of this licence. This report must detail the procedures, visual observations and include the original Marine Mammal Reporting Form(s). Any difficulties encountered or recommendations should also be noted.	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			
	EPSL 11 BSL 11	The licensee must, no later than 12 weeks after completion of the noisy activity, complete and submit a Close-out Report in the online Marine Noise Registry.	All phases of works	Contractor Environmental Manager reporting to the Marine Consents Manager (Employer)			

3 ENVIRONMENTAL MANAGEMENT FRAMEWORK

3.1 Introduction

This section sets out the environmental management framework for the Project, under the following areas:

- Offshore CEMP – roles and responsibilities;
- Offshore CEMP – staff competency and training; and
- Offshore CEMP – communications and reporting.

3.2 Offshore CEMP Roles and Responsibilities and Chain of Command

This section sets out the roles and responsibilities of all relevant Project personnel in relation to the delivery of this offshore CEMP.

All Project personnel have a responsibility to comply with the requirements of the offshore CEMP, however, the key roles relevant to the delivery and implementation of the offshore CEMP are outlined in **Table 3-1**.

Table 3-1 Roles and responsibilities

Role	Responsibilities	Name and Contact Details
Project Manager (<i>Contractor</i>)	<p>Responsible for ensuring that the project is in compliance with any Consent, licence or associated information and identifies any breach or potential breach to the Employer Marine Consents Manager. Specific responsibilities, include:</p> <ul style="list-style-type: none"> ▪ Facilitate dissemination of environmental requirements to the Project Team; ▪ Ensure and be responsible for compliance with all permits, licences and consents, and to report any deviations or breaches; ▪ Oversee the implementation and review of environmental procedures throughout the Project; ▪ Monitor the environmental performance of the Project through maintaining an overview of incidents, inspections and audits; ▪ Ensure that environmental considerations form an integral part of Design and Implementation of the Works and include environmental reviews as part of regular Project meetings; ▪ Review environmental matters with the Contractor Environmental Manager on a regular basis and as per project requirements; ▪ Liaise with the Contractor Environmental Manager on all environmental issues as appropriate; ▪ Ensure that all environmental incidents are reported to the Contractor Environmental Manager according to agreed procedures; and ▪ Nominate individual Project Team members to support the Employer in public relations and community liaison activities, including local community meetings. 	
Project Manager (<i>Employer</i>)	<p>Amongst others is responsible for ensuring that the project is in compliance with any Consent, licence or associated information and identifying and breach or potential breach to the Marine Consents Manager.</p>	
Offshore Manager (<i>Contractor</i>)	<p>The Offshore Manager will be responsible for overseeing the monitoring of environmental and licence compliance during works. The Contractor Site Manager is experienced in ensuring site operations function in a manner that is environmentally compliant. Specific, responsibilities include:</p> <ul style="list-style-type: none"> ▪ Understanding and implementing all environmental procedures ensuring that site operations function in compliance; ▪ Reporting environmental incidents at the earliest possible time and advising the Contractor’s Environmental Manager & Project Manager; 	

Role	Responsibilities	Name and Contact Details
	<ul style="list-style-type: none"> ▪ Ensuring toolbox talks are carried out as necessary to highlight responsibilities of the project under the offshore CEMP. 	
RQHSE Business Partner (<i>Contractor</i>)	<p>The RQHSE Business Partner shall ensure that:</p> <ul style="list-style-type: none"> ▪ Incidents are thoroughly investigated and reported throughout the Company; ▪ Assistance is provided, when appropriate, during investigations; ▪ Investigation levels are appropriate to the actual or potential severity of the incident; and ▪ Incidents are reported in compliance with statutory requirements. 	
Group SHE Manager (<i>Employer</i>)	<p>The Group SHE Manager shall ensure that:</p> <ul style="list-style-type: none"> ▪ Incidents are thoroughly investigated and reported throughout the Company; ▪ Assistance is provided, when appropriate, during investigations; ▪ Investigation levels are appropriate to the actual or potential severity of the incident; and ▪ Incidents are reported in compliance with statutory requirements. 	
Offshore Client Representative (<i>Employer</i>)	<p>The Employer Offshore Client Representative shall be responsible for ensuring that the Employers requirement under the contract with the Contractor are met. They shall be responsible for identifying and raising any defects or breaches against the contract, licences or supporting information. These defects and breaches shall be detailed in the Daily Project Report (DPR).</p>	
Marine Consents Manager (<i>Employer</i>)	<p>The Employer Marine Consents Manager shall be responsible for:</p> <ul style="list-style-type: none"> ▪ Obtaining, Marine Licences, Marine Works Licences and Marine EPS Licences (as appropriate) for the works; ▪ Review and acceptance of Contractor documentation; ▪ Conducting vessel inspections and pre works briefings where they relate to licence conditions or Consent compliance and ▪ Working alongside with the external stakeholder engagement team in developing relationships, including Marine Scotland and The Crown Estate Scotland, to ensure that the project information is communicated as and when appropriate, in order to build consensus around project decision making. <p>They shall be in direct communication with the Employer Project Manager and Employer Offshore Client Representative.</p>	
Company Fisheries Liaison Officer (CFLO)	<p>The primary responsibilities of the CFLO are to establish and maintain effective communications between Employer, the Contractor and legitimate sea users during surveys and construction and ensure compliance with best practice guidelines whilst doing so. The primary responsibilities of the CFLO are described in detail in the FLMAP.</p>	

Role	Responsibilities	Name and Contact Details
Fisheries Industry Representative (FIR)	The FIR reports to the CFLO and works in conjunction with Employer. The primary responsibilities of the FIR are also described in the FLMAP.	
Marine Mammal Observer (MMO) and PAM operator	<p>The Marine Mammal Observer (MMO) and Passive Acoustic Monitor (PAM) operator shall be trained or experienced in UK waters and shall implement the requirements set out in any applicable EPS Licence, Marine Mammal Protection Plan (MMPP) or EPS Risk Assessment, along with compliance with any other applicable legislation or guidance such as the JNCC guidance. They shall be employed by the Contractor and shall be dedicated to the role on a full-time basis. A minimum of two MMO/PAM operators will be provided for 24-hour works.</p> <p>MMOs/PAM Operators will only be present onboard the main large vessels and only as required based on the phase of the project and the equipment in use.</p>	
Environmental Manager (<i>Contractor</i>)	<p>The Contractor Environmental Manager will be based at the Contractors head office and be in close contact with the Project Manager. The Contractor Environmental Manager shall be responsible for:</p> <ul style="list-style-type: none"> ▪ Preparation, implementation and undertaking reviews of environmental plans in accordance with Employer and Contractor requirements and procedures and current legislation; ▪ Providing the necessary updates and reports to Project Team and Employer; ▪ Interfacing with site staff and subcontracted companies on environmental issues; ▪ Ensuring the Project specific offshore CEMP is implemented, ensuring compliance with procedures and legislation; ▪ In conjunction with the Employer, liaising with government departments, local authorities and other statutory authorities on environmental matters, as per project needs; and ▪ Reviewing Method Statements against environmental issues. 	
Ecological Clerk of Works (ECoW)	The Contractor shall appoint an independent Ecological Clerk of Works (ECoW) to monitor the Contractor's operations within the terrestrial environment and the inter-tidal zone during the Works to ensure the Contractor's environmental and CEMP compliance. These persons have the authority to stop or interrupt Works for any non-compliance. They also deliver toolbox talks, training and undertake audits.	
Archaeology Clerk of Works (ACoW)	Should a watching brief be required as a condition of any consent, the Contractor shall employ an archaeological advisor (with local knowledge) to undertake any archaeological watching brief, subject to the Employer's approval. The Contractor's advisor shall develop a witnessing plan that includes the Employer and any statutory authority as relevant and is agreed by the Project Manager.	
Other project staff	All other project staff, are responsible for ensuring that they adhere to the following:	

Role	Responsibilities	Name and Contact Details
	<ul style="list-style-type: none">▪ Understand and implement procedures relevant to their role as laid out in the offshore CEMP and the associated documentation including FLMAP and MMPP;▪ Raise any environmental concerns with their supervisor or the Contractor Environmental Manager; and▪ Report all environmental incidents to their supervisor or the RQHSE Business Partner as soon as possible.▪ Compliance with offshore CEMP.	

3.3 Contractor Staff Competence, Training and Awareness

Contractor will require that all personnel engaged in the Project have adequate experience to perform the activities executed under their responsibility or in their scope in a safe manner for themselves and others and are adequately supported at all levels. This will be confirmed by the Contractor Environmental Manager.

Contractor will ensure that a Project organogram is in place and that the roles and responsibilities of all named personnel are clear and that clear project management procedures are in place for all aspects of the Project, including those related to environmental management measures.

Contractor has a documented process in place to manage the selection and ongoing performance of any subcontractors to ensure that the SHE risks associated with the *Contractors'* activities are managed effectively.

Contractor will require that any subcontractors have appropriate environmental management procedures in place.

Contractor (or their appointed representative) will undertake audit and inspection of *Contractor's* work to check compliance with SHE requirements.

Contractor will require that all Project personnel attend required inductions including, but not necessarily limited to, matters related to Employer's environmental rules and policies, Site Rules, Health and Safety requirements, arrangements for First Aid and Emergency Response (including environmental pollution and emergency spills), Environmental Management, including Consent compliance requirements and Incident Management.

Training and awareness specific to this offshore CEMP will be delivered using the following tools:

- Vessel inductions;
- Toolbox talks; and
- Vessel notice boards / awareness materials.

3.4 Project inductions

Project inductions shall cover the offshore CEMP, highlighting the key environmental sensitivities and considerations. This is to ensure that every Project Team member is aware of their duty and the work-related specific hazards. Vessel Inductions are used to raise awareness for personnel regarding site/vessel rules, emergency response procedures and environmental protection arrangements.

3.5 Toolbox talks

A toolbox talk will be held for all vessel crew as part of the daily briefing to be held before starting the operation. In addition, a toolbox talk will be held for any significant abnormal task or change in operation. These meetings are to address the exact nature of the task and HSE issues specific to the task being performed during a new working day/shift or task change. A list of attendees will be recorded at each toolbox talk meeting. Toolbox talks are a combination of briefing followed by a consultation with the workforce to check understanding and invite opinion.

3.6 Vessel notice boards/awareness materials

In addition to induction and talks, the Contractor Environmental Manager will be responsible for managing the preparation of a series of awareness materials, which may include training packs, posters, signs and newsletters. For example, posters on specific procedures can be on display on notice boards on the cable installation vessel.

3.7 Offshore CEMP Communications and Reporting

Internal communications

The following summarises the lines of communication between the key roles in relation to the implementation of the CEMP:

- The Contractor Environmental Manager plays a key role in the delivery of the offshore CEMP, alongside the Contractor Offshore Manager and the *Employer* Marine Consents Manager and the *Employer* Offshore Client Representative. In fulfilling this role, the *Employer* Marine Consents Manager and *Employer* Offshore Client Representative can establish direct contact with the *Employer* Project Manager;
- The *Employer* Marine Consents Manager will report directly to MS-LOT on compliance with the offshore CEMP and will liaise with MS-LOT and other stakeholders on environmental matters; and
- The *Employer* Marine Consents Manager and *Employer* Offshore Client Representative will maintain direct contact with and report on the offshore CEMP compliance and environmental management issues to the *Employer* Project Manager.

During the works, daily (or as required) meetings / calls will take place involving the Employer Project Manager, the Contractor representatives, the Employer Marine Consents Manager and the Employer Offshore Client Representative. Consents and licence compliance and environmental management will be discussed as necessary. Any issues or points to note will be recorded in the Daily Project Report (DPR).

The *Contractor* will be required to provide regular written reports to the *Employer* on installation activity. *Contractor* reporting will include information on environmental management such as details of environmental incidents (if any), environmental statistics and records of environmental inspections / audits undertaken and any such other information as may be required for the Contractor Environmental Manager to complete their reporting responsibilities. This information will inform the external reporting to MS-LOT (see below).

All Project personnel will be required to report any environmental concerns or issues to the Contractor Environmental Manager and/or Contractor Offshore Manager and the Employer Offshore Client Representative immediately.

3.8 External communications

Table 3-2 summarises the offshore CEMP external reporting requirements, mechanisms and frequencies.

The relevant returns and notifications as required by the Marine Licence (and set out in Table 3-2) will be collated from information supplied by the *Contractor* and the *Employer* Project Team where necessary.

Table 3-2 Required returns and notifications

Communication Type	Responsible Party	Proposed Frequency	Relevant Stakeholders
Pre-installation reporting requirements			
Proposed date of commencement of installation	<i>Employer</i> Marine Consents Manager	No later than 4 weeks prior to commencement of cable installation	MS-LOT

Communication Type	Responsible Party	Proposed Frequency	Relevant Stakeholders
Details of the proposed nature and timescale of the cable installation works	CFLO via Notice to Mariners (NTM)	No later than 10 days prior to commencement of cable installation	All appropriate maritime users; Kingfisher Fortnightly Bulletin; Fishermen, their representatives and other relevant marine stakeholders
Registration of any noisy activities in the JNCC Marine Noise Register	Contractor Environmental Manager	Prior to submission of the Marine Licence and EPS Licence applications.	JNCC
During installation			
Details of the proposed nature and timescale of the cable installation works	CFLO via NTM	During cable installation (as / if required)	Fishermen, their representatives and other relevant marine stakeholders
Change to any of the information on which the Marine Licence is based	The <i>Employer</i> Marine Consents Manager	As soon as reasonably practical	MS-LOT
Details of any part of the licenced works that has become a danger to navigation or protection of legitimate users of the sea	Offshore Manager (<i>Contractor</i>) informing the Offshore Client Representative (<i>Employer</i>)	As soon as reasonably practical	Maritime and Coastguard Agency (MCA), Northern Lighthouse Board (NLB) and Kingfisher Information Service Offshore Renewables and Cable Awareness (KIS-ORCA)
Environmental or pollution incidents	Offshore Manager (<i>Contractor</i>) informing the Offshore Client Representative (<i>Employer</i>)	All environmental or pollution incidents are to be reported to the Offshore Client Representative (<i>Employer</i>) within 30 minutes.	MS-LOT, MCA
Archaeological discovery	<i>Employer</i> Marine Consents Manager	Following an archaeological discovery	Historic Environment Scotland (HES) and MS-LOT
Post-installation reporting requirements			
Notification of completion of operations	<i>Employer</i> Marine Consents Manager	Within one week of completion of cable installation	MS-LOT
Nature and quantity of all substances and articles deposited below Mean High Water Springs (MHWS)	<i>Employer</i> Marine Consents Manager	Within four weeks of completion of cable installation	MS-LOT

Communication Type	Responsible Party	Proposed Frequency	Relevant Stakeholders
Copy of Marine Licence and 'As Laid Plan'	<i>Employer</i> Marine Consents Manager	Following completion of cable installation	The Hydrographic Office And notify MS-LOT of the notification at the time it is made
Cable route and a 500 m zone either side of it as a hazardous area for anchoring	<i>Employer</i> Marine Consents Manager	Following completion of cable installation	Maritime and Coastguard Agency (MCA), UK Hydrographic Office (UKHO), Northern Lighthouse Board (NLB), the Kingfisher Information Service Offshore Renewables and Cable Awareness (KIS-ORCA) and the UK International Cable Protection Committees And notify MS-LOT of the notification at the time it is made
Assessment of any risks posed by final subsea cable route, burial depths and un-trenched areas where protection measures were used (to ensure that the safety of navigation and other legitimate users of the sea is not compromised)	Contractor Environmental Manager	Within eight weeks of completion of cable installation	MS-LOT
Marine mammal sightings	<i>Contractor</i> to prepare MMO reports for issue to MS-LOT by the licence holder	Within 4 weeks of completion	MS-LOT, JNCC and NatureScot

4 MARINE MAMMAL PROTECTION PLAN

4.1 Overview

The Contractor will ensure legal compliance and implement measures in line with the relevant regulatory and policy framework regarding marine mammals.

To reduce the collision risk and disturbance to marine mammals a Marine Mammal Protection Plan (MMPP) has been prepared (Section 4.2). The mitigation measures in the MMPP are informed through a separate European Protected Species (EPS) Risk and Protected Sites and Species Assessment undertaken for the Project (Intertek Document Reference P2577_R5892 Appendix C).

There are no recorded seal haul-out sites nearby the cable landfalls at Murkle Bay or Rackwick Bay, with the closest designated haul-out sites being Selwick, found 11.1km north of Rackwick Bay around the Hoy coastline, and Gills Bay which is found approximately 19km to the east of the installation corridor.

4.2 Marine Mammal Protection Plan (MMPP)

The following measures have been identified to reduce the risk of disturbance to marine mammals (cetaceans and seals) present in the area of the Project through the preparation of a Marine Mammal Protection Plan (MMPP). The potential for disturbance to marine mammals arises primarily from the noise generated by SBP survey activities, as assessed within the EPS RA.

For the duration of all works:

- The *Contractor* will provide all Project personnel with marine mammal awareness and good practice training;
- Posters and signs identifying risks and good practice will be provided (Appendix C);
- Pictures of species of concern will be provided.

For the duration of SBP survey activities:

- Deployment of qualified and trained MMO(s)/PAM operator(s) on a vessel for the duration of survey works to monitor for the presence of marine mammals (cetaceans and seals) prior to the commencement of, and during, the works:
 - There will be MMO coverage for the duration of survey activities deemed as having the potential to have an adverse effect on marine mammals, with trained and experienced MMO(s) working standard 12-hour shifts, as required. They will have experience of working at sea and will be trained and experience in the operation of PAM (acoustic) equipment;
 - During daylight hours the MMOs will carry out visual observations to monitor for the presence of marine mammals prior to commencing activities and will recommend delays in the commencement of activities should any marine mammals be detected within the mitigation zone (see below); and
 - When visibility is poor (i.e. due to fog or during hours of darkness) or light levels are low the PAM system will be operated by a single MMO/PAM operator prior to any cable marine operations commencing.

- Mitigation zone – works only to commence once all marine mammals are clear of the mitigation zone. The following mitigation zones, relating to animals present in the water, will be implemented for the relevant aspects of the Project:
 - 500m for cetaceans;
 - 100m for seals; and
 - Should any cetacean/seal be detected within the relevant zones listed above, activities will be delayed until their passage (or the transit of the vessel) results in the marine mammals no longer present in the mitigation zone. In both cases, there will be a 20-minute delay from the time of the last sighting within the mitigation zone to the commencement/recommencement of the activities.
- Reporting:
 - All marine mammal sightings, including seal sightings, will be documented by the MMO according to JNCC guidelines.
- The MMO will have the authority to postpone or stop works in conditions of low visibility where marine mammal collision risk is high, and the full extent of the safety zone cannot be observed.

5 MARINE ARCHAEOLOGY MANAGEMENT PLAN

5.1 Overview

The *Contractor* is required to protect archaeological assets in the Project area. More detail on the regulatory and policy framework regarding archaeology can be found in Section 8 of the Environmental Supporting Information Report (Intertek Document Reference P2577_R5892).

The Pentland Firth has throughout history been an important maritime route between the Atlantic Ocean and the North Sea. As such there exists the potential for undiscovered wrecks to be present within the Pentland Firth, and by extension the installation corridor. As a result of the Royal Navy's use of Scapa Flow as a base in both WW1 and WW2 and subsequent incursions from German vessels and U-boats, sunken vessels from this era have the greatest potential to be preserved in the Pentland Firth. Potential impacts on unknown heritage will be managed through the implementation of an archaeology and cultural heritage plan management plan (Section 5.2).

5.2 Archaeology and cultural heritage plan management plan

5.2.1 Mitigation by design:

- The potential for significant impacts on marine cultural heritage has been reduced to negligible-low during the development and design of the Project by conducting a desk-based assessment, geophysical and Drop Down Video (DDV) surveys to identify any marine historic environment assets;
- A pre installation survey will be conducted to inform final cable routing and vessel anchoring areas which will seek to avoid any anthropogenic seabed features; and
- Rock filter bags, split pipe, grout bags and/or concrete mattresses will be used to hold the cable in position. This will significantly reduce any cable movement and potential scour or disturbance of unknown archaeological remains over the lifetime of the Project.

5.2.2 Mitigation during installation:

- The *Contractors* Offshore Manager will be the initial point of contact regarding archaeological interests; and
- A Protocol for Archaeological Discoveries (PAD), based on Wessex Archaeology (2014) for the Crown Estate (<http://www.wessexarch.co.uk/protocolsarchaeological-discoveries-pad>), will be developed to manage potential impacts on unknown heritage, should previously unknown marine cultural material be discovered during development, if required as a licence condition.

5.2.3 Mitigation during operation:

- The reporting protocol will be kept in place in case anything of interest is observed during cable installation activities. If any cultural heritage sites are reported during cable installation activities, it is recommended that they are investigated by a qualified marine archaeologist to determine their cultural heritage importance.

6 INVASIVE NON-NATIVE MARINE SPECIES PLAN

6.1 Overview

It is common practice for offshore construction projects around the UK to manage the risk of introduction of non-native marine species. As such all vessels involved in cable installation activities will be required to meet relevant legislative requirements and best standard practices with regards to ballasting activities and vessel biofouling management.

6.2 Regulatory requirements

To prevent the risk of spread of non-native species through discharging of ballast water, all works will be carried out in accordance with The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM).

The International Maritime Organisation (IMO) also aims to control and manage ships' biofouling through the implementation of the Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species (Biofouling Guidelines IMO 2011) (resolution MEPC.207 (62)). The Biofouling Guidelines state that a ship should implement biofouling management practices, including the use of anti-fouling systems and other operational management practices to reduce the development of biofouling. The intent of such practices is to keep the ship's submerged surfaces, and internal seawater cooling systems as free of biofouling as practical.

In addition, in 2014 NatureScot commissioned the production of guidance for producing site and operation-based plans for preventing the introduction of non-native species (Payne *et al.*, 2014).

The mitigation and management measures to be adopted to prevent the introduction of invasive non-native species are set out below:

6.3 Invasive Non-Native Marine Species Management Plan

In adopting management measures to prevent the introduction of INNMS, The *Contractor* will:

- Ballast water management:
 - Ensure all vessels contracted to undertake works will be contractually obliged to adhere to relevant BWM measures as outlined above, where relevant and be surveyed and issued with an International Ballast Water Management Certificate.
 - Ballast Water Management Plans (BWMP) will be provided by contracted vessels in accordance with Regulation B-1 of the Convention, alongside Ballast Water Record Books as described by BWM Regulation B-2.
- Biofouling / Antifouling:
 - The *Contractor* will ensure that all vessels consider the requirements of Resolution MEPC.207(62) Guidelines for the Control and Management of Ships Biofouling to
 - Minimise the Transfer of Invasive Aquatic Species, including for example the implementation of a biofouling management plan, and records of biofouling management practices kept in a biofouling record book.
- Ensure all vessels (as appropriate) have an International Anti-fouling System Certificate.

- All vessels will be required to undertake pre use and post use checks, including the presence for marine growth. All equipment (ploughs, ROVs etc.) will be required to be free from marine growth prior to mobilisation.

7 WASTE MANAGEMENT PLAN

7.1 Overview

The principal wastes generated from the works will include packaging, general waste and wastewater. Hazardous wastes are possible in the form of used oils and chemicals. Under the Duty of Care as a waste producer, the failure to manage wastes generated from the Project, such as failure to segregate recyclates, also results in breaches of waste management legislation in addition to potential environmental impact.

In accordance with MARPOL (73/78) Annex V (as amended) every ship (certified to carry 15 persons or more), and vessel (of 400 gross tonnage and above) involved in the Project will have a Waste Management Plan. The purpose of the vessel Waste Management Plan is to provide guidance to the Master and crew on board the ship on the procedures for collecting, storing, processing and disposing of waste, including the use of the equipment on board. Vessel Waste Management Plans will detail the specific ship's equipment and arrangements, and the location of equipment operating manuals.

7.2 Waste management plan

7.2.1 General

- The only materials to be deposited to the seabed will be those detailed in the Marine Licence.
- All vessels engaged in the works will be equipped with waste storage facilities according to IMO International Convention for the Prevention of Pollution from Ships (MARPOL) standard vessels certified to carry 15 persons or more or of 400 GRT and above will have the following in place:
 - Waste management plan; and
 - Waste record book.
 - No waste will be disposed of over the side of the vessel and all produced waste will be stored on board.
 - All waste products and rubbish will be removed from the vessel and disposed of by a registered waste disposal company.
 - Any debris or waste materials arising during the works will be removed from the vessel and disposed of by a registered waste disposal company.

7.2.2 Waste Reduction

The waste hierarchy of Prevention, Re-use, Recycle and Disposal will be adopted on the Project. The following measures will align the Project waste management with the hierarchy and reduce the amount of waste produced during construction:

- The appropriate volume of materials will be ordered;
- Excess materials will be returned to the supplier if possible;
- Re-usable materials will be identified on site and removed for storage and re-sale;
- Recyclable materials will be removed from site for processing in licenced facilities;
- There will be clearly located and defined storage areas for materials; and
- General information on waste will be provided in site inductions and toolbox talks with feedback welcomed.

7.2.3 Storage Of Waste

- The following methods have been identified in relation to storage of waste:
- Storage will be provided at suitable points for all waste streams including hazardous waste, liquid wastes and discarded smoking materials;
- Waste will be segregated as far as practically possible;
- Waste will be stored in secure covered containers which will be clearly labelled with the waste they hold e.g. wood, metal, plastics etc.;
- Liquid wastes will be stored in appropriately (portable or permanent) bunded facilities that hold the capacity of the container;
- Any hazardous waste will be stored in separate containers (further details on hazardous waste are provided below);
- Any odorous wastes will be temporarily stored in suitable containers and where possible, at a distance from any nearby sensitive receptors;
- All places of work will be kept clean and tidy. Waste will not be allowed to accumulate. All surplus material and waste are to be removed in a timely manner;
- Storage areas / containers will be monitored, and action taken if waste is piled too high; and
- Burning of waste is prohibited.

7.2.4 Hazardous (Special) Waste

“Hazardous waste” –any waste which contains properties that might make it harmful to human health or the environment. In Scotland, hazardous waste is referred to as Special Waste.

Special Waste could arise from the following sources:

- Maintenance of plant and machinery;
- Oily water waste;
- Oil filters;
- Oily rags;
- Oil absorbent pads etc.;
- Contaminated Marine Gas Oil (MGO);
- Hydraulic oil; and
- Environmental spill recovery (small amounts only; larger volumes taken away directly for disposal).

All Special Waste will be segregated by type and from other waste streams.

All Special Waste oil will be stored in a bunded facility until such times that it is collected.

Used filters, rags and absorbents will be stowed in the special waste container in drums or waste oil bags.

7.2.5 Transporting Waste

There is a duty of care on the waste producer to make sure that waste is appropriately disposed of. The following measures have been identified to comply with the duty of care:

- All waste leaving the Project will be accompanied by a Waste Transfer Note (WTN) for non-hazardous waste or a Special Waste Consignment Note (SWCN) for hazardous waste. A copy of which will be retained for 2 (WTN) or 3 years (SWCN); and
- Waste contractors will be checked ahead of the works to ensure they have valid licences.

8 POLLUTION PREVENTION, SPILL RESPONSE AND CONTINGENCY PLAN

8.1 Overview

The *Contractor* will be responsible for ensuring all measures set out in the six technical Annexes of the International Convention for the Prevention of Pollution from Ships (MARPOL) are adhered to and appropriate management plans relating to each of the items above are produced and adhered to throughout the works.

There are legislative requirements (Section 9.3) that stipulate specific requirements with regards to every ship (certified to carry 15 persons or more), and vessel (of 400 GRT and above). Not all vessels involved in the proposed works will be over 400 GRT. Vessels under 400 GRT, are not subject to the legislative requirements around ship waste. However, these vessels will be operated by a responsible competent contractor.

8.2 Emergency Spill Response

All vessels 450 GRT and above require an approved SOPEP i.e. procedures and descriptions of actions to be taken in the event of an oil pollution incident. The SOPEP shall contain all information and operational instructions as required by the “Guidelines for the development of the Shipboard Oil Pollution Emergency Plan” as developed by the Organization (IMO). The appendices contain names, telephone, etc., of all contacts referenced in the SOPEP, as well as other reference material.

The following measures have been identified regarding emergency spills:

- Work will stop immediately, and the source of the spill will be addressed where possible;
- Follow vessel SOPEP procedure and emergency spill response;
- Isolate the source of the spill / leak if safe to do so;
- Sources of ignition will be eliminated – in case of spilled substance being flammable;
- The spill will be contained as far as practicable using appropriate spill equipment;
- All spills will be reported to the appropriate authorities where applicable;
- The Project Team will be provided with emergency spill response training;
- Spill kits will be made available at fuel storage and refuelling locations and in individual plant vehicles and vessels; and
- Spill kits will be replaced after use.

The collected contaminant from a spill will be treated as hazardous (Special) waste and will be disposed of appropriately.

8.3 Monitoring and Record Keeping

The COSHH record for any chemicals stored on the Project will be kept and updated by the Contractor along with the data sheet for any COSHH Material, chemical or substance. Operating instructions have to be prepared (under the use of current Material Safety Data Sheets (MSDS)). For all used hazardous substances a register has to be maintained.

Records will be kept of all visual fuel and oil checks of plant and fuel and oil storage containers by the Contractor.

Records will be kept by the Contractor of all spills and actions taken will be noted. Lessons learned will be communicated as appropriate (see also section 12).

8.4 Pollution Prevention Measures Onshore (At Cable Landfall)

The pollution measures for the onshore activities are documented in the onshore CEMP (ERM, 2019).

9 MONITORING AND REPORTING PLAN

9.1 Introduction

Monitoring and reporting of activities during the Project is required in order to ensure works are carried out as per legislation, consent and licence conditions and in line with the *Employer* requirements. This section describes the monitoring (including auditing) and reporting activities that will be performed during the execution of the Project. These requirements are additional to the external communications requirements detailed in Section 3.

9.2 Monitoring during cable installation

Vessel inspections

All vessels used on the Project shall be fully compliant with the ISM Code and flag state requirements. Where ISM Code does not apply to a vessel used due to vessel size, the vessel operator shall ensure that the vessel has a suitably integrated Safety Management System in use on board the vessel.

Table 9.1 outlines a number of environmental documents / certificates the vessels will be expected to provide in order to comply with the environmental aspects of the initial vessel audit and / or ongoing audits throughout the Project work. Documentation will be required to be provided to the *Contractor* (where specified) ahead of operations and prior to HAZID in order that any necessary amendments can be made in advance of works commencing. Pre works vessel checks will be undertaken by the *Contractor*, to ensure all appropriate documentation is on board the vessel.

Table 9-1 Vessel Audit – Environmental Compliance Checklist

Aspect	Document	Action	Responsibility for Provision	Date completed/ reviewed or checked [HOLD: to be completed through works]
Marine Licence and related documentation	Marine Licence	Copy of Marine Licence to be on board vessel throughout works	Vessel	
	EPS Licence	Copy of EPS Licence to be on board vessel throughout works	Vessel	
	Basking Shark Licence	Copy of BS Licence to be on board vessel throughout works	Vessel	
	Offshore CEMP (incorporating the MMPP)	Copy of Offshore CEMP to be on board vessel throughout works	Vessel	
	FLMAP	Copy of FLMAP to be on board vessel throughout works	Vessel	
	MMO Records	Evidence required at vessel audit	Vessel	

Aspect	Document	Action	Responsibility for Provision	Date completed/ reviewed or checked [HOLD: to be completed through works]
Water Protection	Shipboard Marine Pollution Emergency Plan (SOPEP)	Plan to be presented prior to the HAZID, and on board vessel throughout works	Vessel	
	Ensure that materials are secured on deck	Evidence required at vessel audit	Vessel	
	Wastes are required to be contained on board vessels for appropriate disposal on return to port	Evidence required at vessel audit	Vessel	
Oily Discharges	Oil Pollution Prevention Certificate	Certificate to be presented prior to the HAZID, and on board vessel throughout works	Vessel	
	Oil Record Book	Record book to be on board vessel throughout works	Vessel	
Ballast Water Management (if applicable)	International Ballast Water Management Certificate	Certificate to be presented prior to the HAZID, and on board vessel throughout works	Vessel	
	Ballast Water Management Plan	Plan to be presented prior to the HAZID, and on board vessel throughout works	Vessel	
	Ballast Water Record Book	Record book to be on board vessel throughout works	Vessel	
Biofouling Management	International Anti-Fouling System Certificate	Certificate to be presented prior to the HAZID, and on board vessel throughout works	Vessel	
	Biofouling Management Plan	Plan to be presented prior to the HAZID, and on board vessel throughout works	Vessel	
	Biofouling Record Book	Record book to be on board vessel throughout works	Vessel	
Waste Management	Waste Management Plan	Plan to be presented prior to the HAZID, and on	Vessel	

Aspect	Document	Action	Responsibility for Provision	Date completed/ reviewed or checked [HOLD: to be completed through works]
		board vessel throughout works		
	Waste Record Book	Record book to be on board vessel throughout works	Vessel	
	Controlled Waste Transfer Note / Special Waste Consignment Note	Notes to be on board vessel at vessel audit and throughout works	Vessel	

9.3 Reporting During / After Installation

End of installation reporting

Reporting requirements for close out of licence to be added when Marine Licence received.

9.4 Incident Response and Reporting

Incident response and reporting are not part of this CEMP; however, all incidents negatively impacting the environment are to be reported within 30 minutes to the SSEN Offshore Client Representative. The SSEN Offshore Client Representative will inform the Employer’s Marine Consents Manager and the Employer’s Project Manager. The SSEN 30 minute reporting hotline is 0800 107 3207.

REFERENCES

1 AECOM. (2019a). Pentland Firth East Submarine Cable Replacement: Combined Kirkwall and Thurso Navigational Risk Assessment Workshops Summary March 2019.

2 AECOM. (2019b). Pentland Firth East Submarine Cable Replacement: Navigational Risk Assessment Report Kirkwall 19 February 2019.

3 AECOM. (2019c). Pentland Firth East Submarine Cable Replacement: Navigational Risk Assessment Report Thurso 26th March 2019.

4 ERM. (2019) Pentland Firth East Cable Replacement. Shore End Construction Environmental Management Plan (CEMP).

5 Intertek. (2019) Pentland Firth East Cable Replacement – Marine License Application. Environmental Supporting Information (ESI). Intertek Document Reference P2291_R4837

6 Marine and Coastguard Agency (MCA,2021) MGN 661 (M+F) Navigation – safe and responsible anchoring and fishing practices. (online). Available at <https://www.gov.uk/government/publications/mgn-661-mf-navigation-safe-and-responsible-anchoring-and-fishing-practices/mgn-661-mf-navigation-safe-and-responsible-anchoring-and-fishing-practices>

7 SHEPD. (2019). Fishing Liaison Mitigation Action Plan: Pentland East and Hoy.

8 XODUS. (2019) EPS Risk and Protected Sites and Species Assessment - Pentland Firth East EPS Risk and Protected Sites and Species Assessment. Document Number: A-302428-S01-REPT-001.

APPENDIX A

Marine Licence

APPENDIX B

EPS Licence and Basking Shark Licence

APPENDIX C

Codes of Conduct