



METHOD STATEMENT

PROJECT:	PLAT-O #1 @ EMEC		
SUBJECT:	SYSTEM DECOMMISSIONING		
DOC NAME:	SME-SB-02016	PROJECT REF:	PLAT-O


Revision:	Date:	Details:	Author:	Approved:
A	26-4-18	For review	AJH	-
1	27-4-18	Issued for client review	AJH	JMcG

Proprietary Information

This document contains information of a confidential and commercially sensitive nature. It is provided for information. It is not intended for dissemination to any third parties without the express permission of the author(s) or Client. Use or distribution for any purpose other than that stated is prohibited.


For further information regarding the contents of this document, please contact:

Sustainable Marine Energy Limited, La Belle Esperance, The Shore, Leith, Edinburgh, EH6 6QW, info@sustainablemarine.com

	Client:	SME	
	Project:	PLAT-O #1 @ EMEC	
	Title:	METHOD STATEMENT: SYSTEM DECOMMISSIONING	
	Document Number:	SME-SB-02016	2 OF 7

1 Contents

2	Reference Documents.....	3
3	Introduction.....	3
4	Onshore Balance of Plant.....	3
4.1	Powerhouse Container	3
4.2	Transformer	3
4.3	Control Room Equipment	4
5	Offshore Balance of Plant	4
5.1	Mooring Line Removal.....	4
5.2	Rock Bag Recovery.....	5
5.3	Cable Connection System (CCS) Recovery	5
5.4	Fitment of End Termination.....	5
5.5	Monopile Removal.....	7
5.6	Monopile Base Remedial	7
5.7	Video Survey	7

	Client:	SME	
	Project:	PLAT-O #1 @ EMEC	
	Title:	METHOD STATEMENT: SYSTEM DECOMMISSIONING	
	Document Number:	SME-SB-02016	3 OF 7

2 Reference Documents

- [1] 2013-02-11_Bauer_As-Built_Outer_Anodes_Internals_Externalsneu_Final11_02_13
 [2] SME-SB-00030 STORYBOARD

3 Introduction

The main aim of this document is to provide the high level method statement for SME activities to decommission offshore balance of plant from the EMEC test site. For completeness, a section on decommissioning the onshore balance of plant has also been included.

The onshore balance of plant comprises the Power House, Transformer, interconnecting cables and control rack. The offshore balance of plant comprises the Voith Monopile, Moorings, Rock Bags and Cable Connection System (CCS).

Decommissioning planned to be complete by 31st July subject to weather.

4 Onshore Balance of Plant

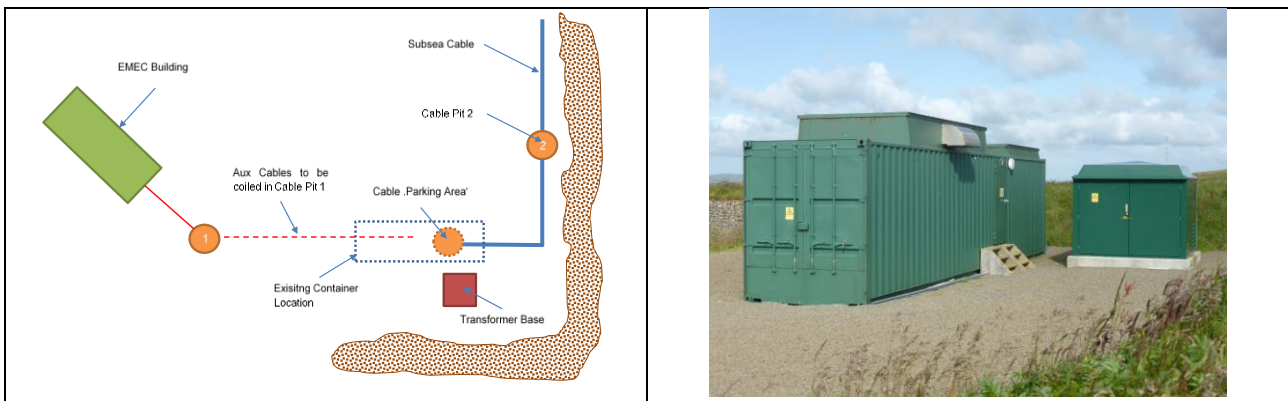


Figure 1: Powerhouse Container and Transformer

4.1 Powerhouse Container

1. Electrical permit and site access permits in place
2. Electrical contractor to disconnect cables and cap or remove as appropriate
3. Construction contractor to lift container with crane on to suitable truck for transport to mainland

4.2 Transformer

1. Electrical permit and site access permits in place
2. Electrical contractor to disconnect cables and cap or remove as appropriate
3. Construction contractor to lift container with crane onto suitable truck for transport to mainland
4. Transformer base to be filled with gravel as per Figure

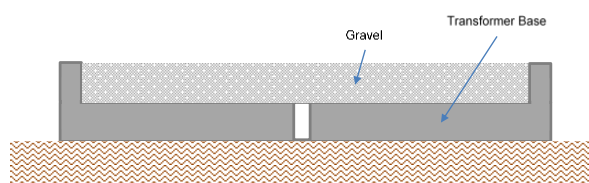



Figure 2: Transformer Concrete Base

	Client:	SME	
	Project:	PLAT-O #1 @ EMEC	
	Title:	METHOD STATEMENT: SYSTEM DECOMMISSIONING	
	Document Number:	SME-SB-02016	4 OF 7

4.3 Control Room Equipment

Already decommissioning and removed from EMEC facility.

5 Offshore Balance of Plant

Operations to be completed by a competent marine operations contractor with support from a competent commercial diving contractor. Most operations will be carried out from a Multicat vessel such as MV Green Isle or MV C-Odyssey.



Figure 3: Moored Multicat on SME Operations in Falls of Warness

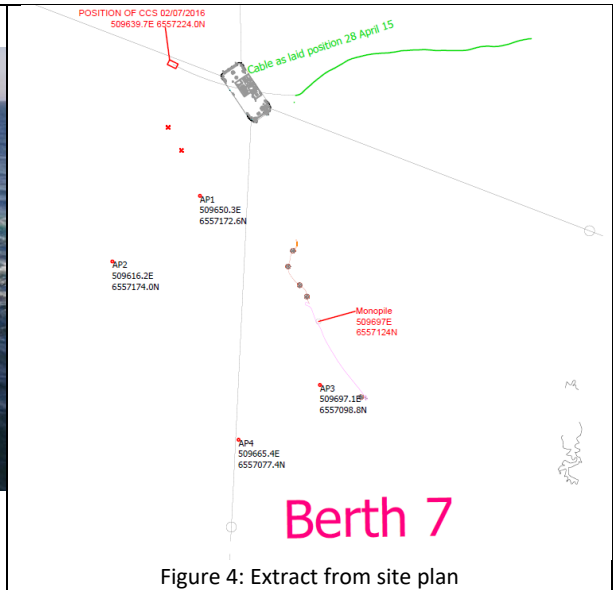


Figure 4: Extract from site plan

5.1 Mooring Line Removal

1. Vessel moors above mooring line
2. Crane hook lowered over anchor position to provide datum line for diver
3. Diver descends
4. Disconnects shackle at end of mooring chain from anchor, ensuring mooring line and chain free to lift.
5. Connects mooring chain to crane hook
6. Connects mooring line deployment frame to crane hook
7. Diver and deployment frame/mooring lines recovered to surface




Fig 5 a) Anchor showing mooring chain with mooring line deployment frame in background.



Fig 5 b) H-Link connection on Anchor 1



Fig 5 c) Shackle Type connection on anchors 2,3,4

	Client:	SME	
	Project:	PLAT-O #1 @ EMEC	
	Title:	METHOD STATEMENT: SYSTEM DECOMMISSIONING	
	Document Number:	SME-SB-02016	5 OF 7

5.2 Rock Bag Recovery

1. Vessel moors above rock bag line
2. Confirm position with drop camera
3. Crane hook lowered over rock bag to provide datum line for diver
4. Diver descends
5. Diver connects crane to rock bag
6. Diver and crane hook recovered to surface

5.3 Cable Connection System (CCS) Recovery

1. Confirm electrical permit to work in place
2. Vessel moors above CCS
3. Crane hook with swivel lowered over anchor position to provide datum line for diver
4. Diver descends and rigs CCS for recovery. Drop camera lowered to monitor operation.
5. Diver connects crane rigging
6. Diver recovered to surface
7. Crane recovers CCS with vessel movement co-ordinated along cable route to control tension and minimise offlead
8. Swivel in-line with crane enables any torsion to be spin out of cable before recovery to deck
9. Secure CCS on deck and stopper off the cable to make safe for personnel to work on CCS.

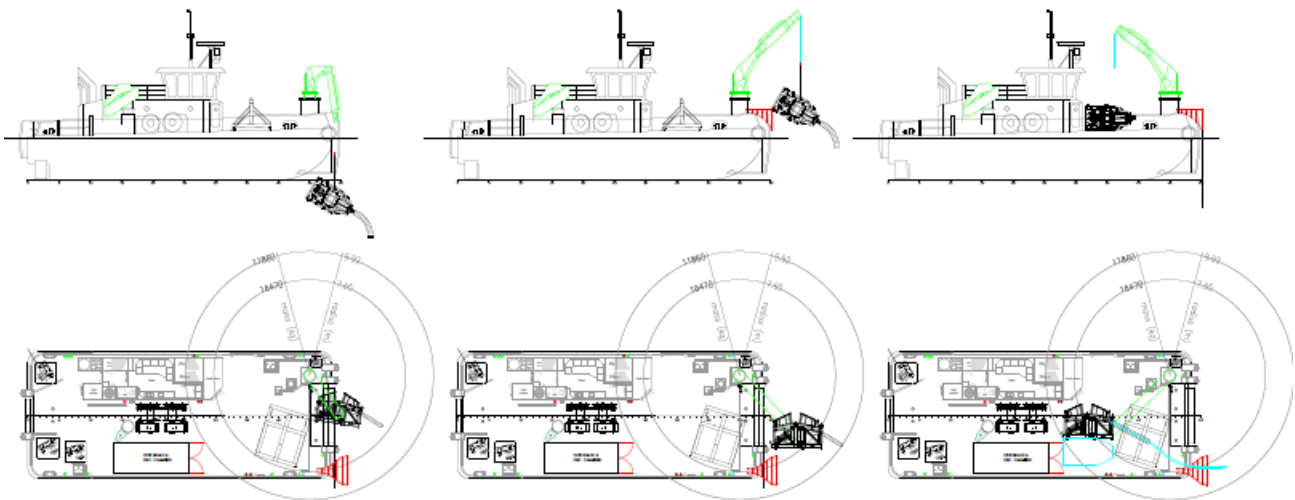



Figure 6: Extract from SME-SB-00030 showing CCS recovery to vessel

5.4 Fitment of End Termination

1. Electrical permit to work still in force
2. Drain transformer oil out of CCS and store in oil drum/cube for safe disposal
3. Disconnect cable from CCS
4. Using crane, carefully remove cable from the CCS and lift into work area
5. Fit end terminations to cables
6. Fusion splice fibres

	Client:	SME	
	Project:	PLAT-O #1 @ EMEC	
	Title:	METHOD STATEMENT: SYSTEM DECOMMISSIONING	
	Document Number:	SME-SB-02016	6 OF 7

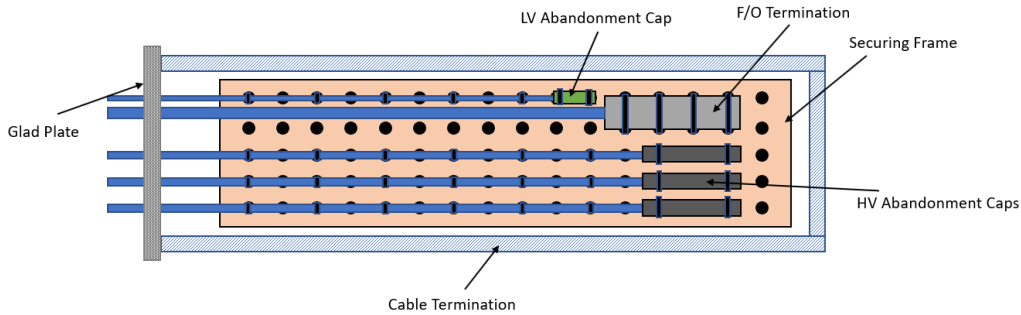


Figure 7: Schematic of cables and fibres secured and terminated inside termination housing

7. Suspend electrical permit to work and conduct tests on cable from shore
8. Once testing complete, ensure electrical permit to work in place again and fit cable inside termination
9. Connect termination to chain and 1T clump weight. Conduct final inspection including O-ring checks.
10. Lower cable termination to seabed, co-ordinated vessel movement with crane to ensure cable is allowed to spin out
11. Suspend electrical permit to work and conduct final tests on cable from shore.

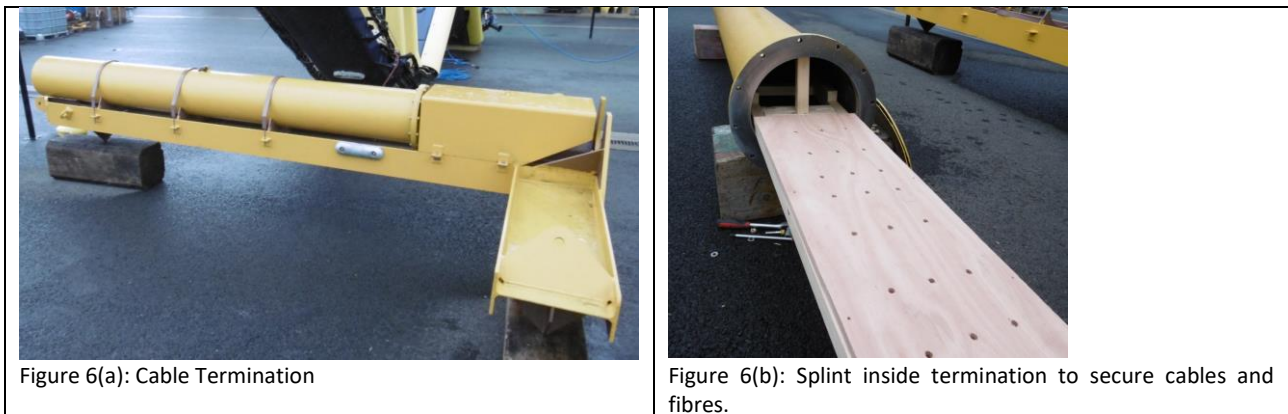



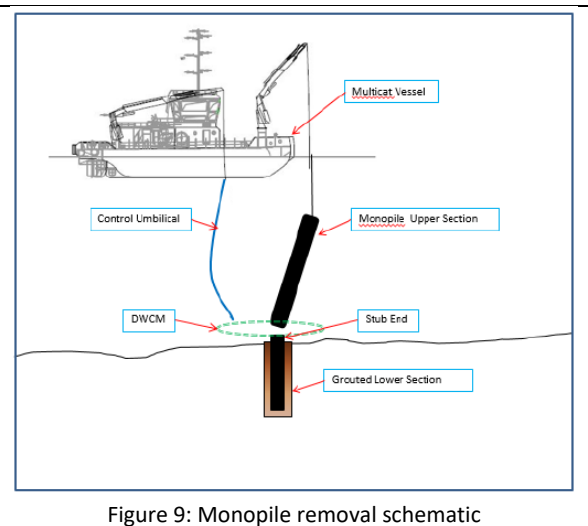
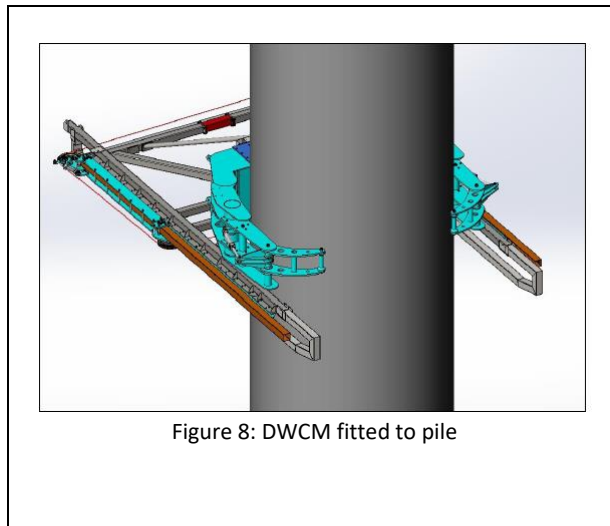
Figure 6(a): Cable Termination

Figure 6(b): Splint inside termination to secure cables and fibres.

	Client:	SME	
	Project:	PLAT-O #1 @ EMEC	
	Title:	METHOD STATEMENT: SYSTEM DECOMMISSIONING	
	Document Number:	SME-SB-02016	7 OF 7

5.5 Monopile Removal

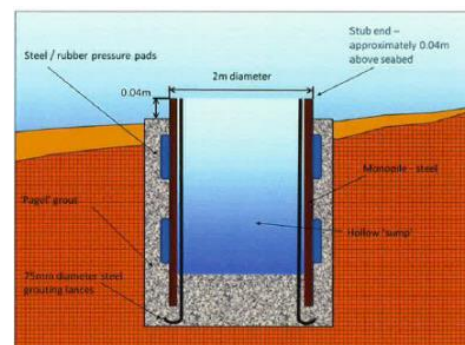
Detailed procedures and vessel will be determined in conjunction with marine contractor who is finally selected to undertake the operation. Baseline method statement presented below.



1. Licenses, permits to work and notices to mariners in place
2. Vessel moors above monopile (4 point mooring spread)
3. Diamond Wire Cutter to be deployed by marine contractor into position on the monopile to cut next to seabed (as close as practicable – 40mm expected).
4. Divers lock and secure the DWCM at base of pile
5. Lift rigging secured around monopile by divers
6. Cutting operation undertaken (estimated durations 11 hours)
7. Recover DWCM to surface.
8. Recover pile from seabed and secure to vessel for transit to shore.
9. Cast off mooring and head to shore (Hatston Pier – TBC)
10. Transfer lift to mobile crane onshore
11. Recover monopile to shore
12. Licensed scrap metal contractor to remove from shore and take ownership of remains of pile.

5.6 Monopile Base Remedial

1. Licenses, permits to work and notices to mariners in place
2. Vessel moors above monopile remains (4 point mooring spread)
3. Drop camera deployed to monitor lowering of rock bags into hole left by monopile
4. Rock bags rigged to crane with method of remote disconnect
5. Rock bags lowered into hole and jettisoned, monitored by drop camera
6. Once all rock bags installed, crane and drop camera recovered
7. Vessel departs.



5.7 Video Survey

Video survey(s) of seabed will be conducted to confirm operations have been completed.