SOUTH FORK WIND FARM

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SAFETY MANAGEMENT SYSTEM

CONSTRUCTION

DEEPWATER WIND SOUTH FORK, LLC

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L. Emmons	January 2017	0 – Draft	R. J. Billington	C. van Beek
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SOUTH FORK WIND FARM

SAFETY MANAGEMENT SYSTEM

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Definitions, Abbreviations, and Acronyms

Term	Description
BOEM	Bureau of Ocean Energy Management
Confined Space	A space large enough and so configured that an employee can bodily enter and perform assigned work, has limited or restricted means for entry or exit, and is not designed for continuous employee occupancy
DAFW	Day Away From Work
DWSF	Deepwater Wind South Fork LLC
Hazard Assessment	The evaluation of a work place, or work situation, as to the potential for hazards that an employee may encounter while performing the job
HSE	Health, Safety, and Environment
Job Safety Analysis (JSA)	Technique to identify the dangers of specific tasks to reduce the risk of injury to workers
Lockout/Tagout (LOTO)	Practices necessary to disable machinery or equipment thereby preventing the release of hazardous energy while employees perform servicing and maintenance activities
Near Miss	An incident in which no property was damaged and no personal injury was sustained but where, given a slight shift in time or position, damage or injury easily could have occurred
OCS	Outer Continental Shelf
OSHA	Occupational Safety and Health Administration
PPE	Personal protective equipment
SFWF	South Fork Wind Farm
Work-related	The work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness

1 PURPOSE

This document describes the project specific Safety Management System for the South Fork Wind Farm (SFWF) project in order to achieve our Health, Safety, and Environment (HSE) objectives listed in Section 2 below.

In general, most of the work will be executed by contractors and suppliers. Contractor/suppliers that will have employees working on the SFWF construction sites, or have signed a Deepwater Wind South Fork LLC (DWSF) contract with a value of $250,000 and higher, or with services that are HSE critical for the SFWF project must as a minimum follow this document. The Package Managers responsible for these contractors/suppliers shall in co-operation with the HSE Manager review contractor/supplier HSE procedures to verify that they are compliant with this document. Provided that the contractor's/supplier's HSE procedure is compliant with this document, work shall be executed in accordance with contractor's/supplier's HSE procedure. These requirements only apply during the construction phase of the SFWF.

2 HSE POLICY, OBJECTIVES AND PRINCIPLES

2.1 *Deepwater Wind Health, Safety, and Environment Policy*

DEEPWATERWIND
Clean energy is just over the horizon.

Deepwater Wind Policy: Health, Safety, and the Environment (HSE)

Our goal is to create a working environment such that we cause

No harm to people, wildlife or the environment.

To achieve this, we will:

- Always comply with the law or our own standards, whichever are more rigorous;
- Work to proactively mitigate risks and continuously improve our operations;
- Set goals and targets, and measure performance against them;
- Hold ourselves and our contractors accountable to meet our expectations; and
- Communicate openly with those who may be affected by our activities.

Safe operations in all company activities is a core value of Deepwater Wind. If operational results and safety ever come into conflict, we all have a responsibility to choose safety over operational results and Deepwater Wind will support that choice.

Jeffrey Grybowski
Chief Executive Officer

01/28/18
Date

2.2 *DWSF HSE Objectives*

The HSE objectives for DWSF are:

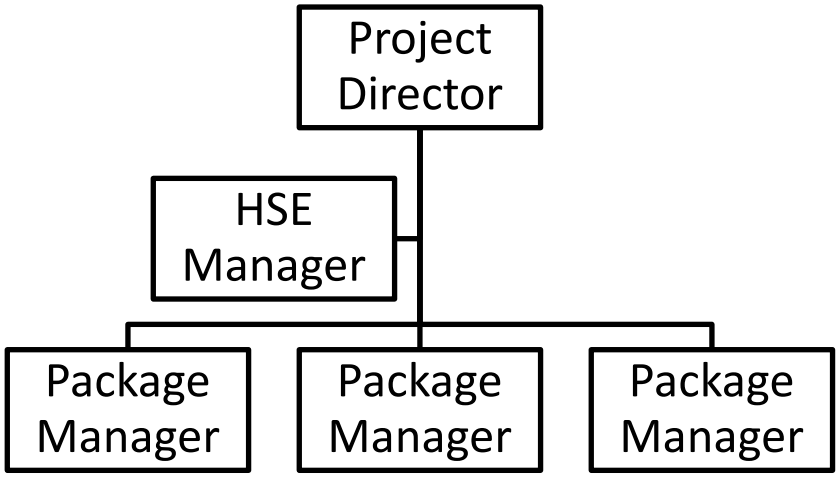
- To achieve a target of zero Day Away From Work (DAFW) incidents;
- To achieve a target of zero Restricted Work, Job Transfer, and Medical Treatment incidents;
- To achieve a target of zero Work-related illnesses;
- To minimize serious Near Miss incidents; and
- To achieve a target of zero recordable environmental incidents (e.g., no reportable spills, no environmental agency notifiable incidents).

2.3 *HSE Principles*

The following are the guiding HSE principles within DWSF:

- Implement an HSE procedure that meets or exceeds the requirements specified in this procedure;
- Maintain the safest reasonably practicable working environment including compliance with site rules and having a work permit system in place for those jobs requiring them (energy isolation, hot work, confined space, major lifting operations, etc.);
- Encourage everyone to stop work if they are not sure that the work is being executed in a safe manner;
- Verify that personnel are safety aware and trained for their respective roles;
- Assess potential hazards, implement the necessary controls when practicable, and verify personnel are aware of the hazards;
- Verify project personnel are fully instructed with respect to the hazards/potential hazards which could be encountered and permits/clearance certificates to which their work is subjected;
- Encourage reporting of Near Miss incidents to allow the communication and implementation of preventative measures to avoid their re-occurrence;
- Investigate and communicate the learnings from significant incidents to reduce the occurrence of related incidents;
- Comply with applicable laws and regulations;
- Promote HSE compliance with this document to bring about improvements in HSE behavior and performance;
- Respect the marine environment;
- Verify that contractors/suppliers work in accordance with their company's HSE procedure provided it meets the expectations established in this document; and
- Prohibit weapons, drugs, or alcohol in our operations.

3 ORGANIZATION



4 HSE RESPONSIBILITIES

4.1 *Project Director*

The Project Director is responsible for keeping this document up to date and to ensure that this Safety Management System is followed during the execution of the SFWF project.

4.2 *Package Managers*

The SFWF project consists of several packages, which together will result in the successful construction of the project. Each package will be managed by a Package Manager.

The Package Managers are responsible for:

- Verifying the contractors/suppliers meet or exceed the requirements in this document;
- Maintaining and reporting the HSE metrics;
- Reviewing contractor HSE procedures to verify they are compliant with this document;
- Confirming adequate resources are available to perform the work safely;
- Verifying the follow-up on risk assessment mitigation actions;
- Ensuring that the investigations of significant incidents are completed and recommendations are being implemented;
- Verifying site inductions are performed; and
- Ensuring that HSE assessments to confirm compliance are being conducted.

4.3 *Contractors/Suppliers*

Contractors/Suppliers are responsible for:

- Maintaining procedures that meet or exceed the minimum expectations set out in this document, the applicable regulations, and the general industry standards;
- Providing an occupational health system appropriate for the work executed for DWSF;
- Every contractor will have a system for a prudent percentage of personnel trained as first responders;
- Executing work in compliance with their approved procedures; and
- Verifying their employees and subcontractors are properly trained and comply with their procedures.

4.4 *All Individuals*

Everyone is responsible for always working safely and will:

- Observe established rules, regulations, and procedures and actively support safety;
- Work in a manner that protects his/her own health and safety;
- Follow instructions and directions given;
- Stop any work they perceive is unsafe;
- Report all incidents, including Near Misses*;*

- Maintain skills and knowledge to perform work competently; and
- Attend and take an active part in HSE meetings.

5 CONTRACTOR/SUPPLIER MANAGEMENT

A majority of the work performed on the SFWF construction site will be conducted by contractors/suppliers and they will be expected to use their own procedures to do the work in most situations. The contactor's/supplier's ability to perform the work safely will be one of the criteria used to select the approved contractor/supplier.

The contractor's/supplier's procedures must meet or exceed the expectations set out in this document, the applicable regulations, and the general industry standards. The Package Managers responsible for the contractors/suppliers should, in co-operation with the HSE Manager, review contractor/supplier HSE procedures to verify that they are compliant with this procedure and that the execution of the work by the contractor/supplier will contribute to achieving the HSE objectives listed in Section 2.

The following topics along with the associated employee training requirements should be addressed if appropriate for the contractor's/supplier's scope of work:

- Confined space
- Electrical safety including Lockout/Tagout
- Diving
- Emergency response
- Environmental compliance
- Fire prevention
- Ground disturbance
- Hazard communication
- Job Safety Analysis
- Offshore transfer
- Management of change
- Material handling
- Permit to work
- Personal protective equipment (PPE)
- Working at heights

6 RISK ASSESSMENT AND MANAGEMENT

DWSF will conduct risk assessments of major work scopes to assess potential HSE issues against the likelihood of their occurrence, consequences if they occur, and impact. Results of these risk assessments should be documented and reviewed on a periodic basis to verify progress on the mitigation actions. Reference the Risk Management Procedure in Appendix 1.

7 MANAGEMENT OF CHANGE

Whenever a substantive change is made to either facilities, documentation, personnel, or operations, the changes should be assessed to verify that the HSE risks are identified and managed during such changes. The procedure includes the approval, implementation, and tracking requirements. Reference the Management of Change Procedure in Appendix 1.

8 EQUIPMENT STANDARDS

8.1 *General Equipment Standards*

DWSF employees and contractors/suppliers are responsible for verifying that the equipment and materials delivered by him/her and/or used by him/her are fit-for-purpose and meet with both statutory and DWSF requirements.

8.2 *Cranes and Jack-up Barges*

Cranes of Jack-up Barges for construction activity shall be appropriate for job, regularly inspected, and meet or exceed industry standards such as 36 CFR Subpart L and API RP 2D, API Spec 2C.

8.3 *Personal Protective Equipment*

In an active, non-office site, the requirement for PPE can be:

- Head protection
- Eye protection
- Foot protection
- Hand protection
- Hearing protection
- Survival suit when working over water and water temperatures are below 50°F

Each site can have its own requirements as deemed necessary by the Package Manager depending of the operations taking place as long as those requirements abide by the spirit of this HSE document.

8.4 *Design Safety*

Each Package Manager should verify that a safety design review is performed in their area of responsibility. This review is to be preventative in nature to verify that equipment and services are delivered in a manner that minimized the opportunity for a safety incident to occur.

9 PERSONNEL COMPETENCY & TRAINING

Personnel should be trained and competent to do the tasks that are assigned to them. At a minimum, personnel should have the following minimum training with a current certificate from an approved course:

- Basic sea survival if working offshore
- Working at heights if falling from 20 feet or more is a risk

Additional individual training needs will be determined by the contractor/supplier based upon the hazards and risks associated with their scope of work.

Individuals new to the site should be provided with a HSE induction by the responsible manager on site. The induction may include but is not be limited to:

- Required PPE and how to use it;
- Work permit requirements;
- Incident reporting;
- Safe zones, restricted zones, and hazards; and
- Emergency escape route, sirens, and other actions.

Visitors to a site should be recorded. Visitors should be given an outline of their safety responsibilities and the site rules.

10 EMERGENCY RESPONSE

DWSF will plan activities with control measures to mitigate against foreseeable emergencies. Should an emergency occur, it will be managed using the Emergency Response Procedure for Construction or the contractor's/supplier's procedure. Reference the Emergency Response Procedure in Appendix 1.

Contractors should have safety plans with escape routes clearly marked.

11 INCIDENT INVESTIGATION

All incidents that could have resulted in serious injuries or economic damage above $1,000,000 or serious environmental damage should be investigated. The investigation should analyze the root cause of the incident and make recommendations that prevent recurrence. Lessons learned and corrective actions should be shared throughout the project.

12 HSE AWARENESS SCHEMES

All employees are responsible for familiarizing themselves with DWSF's HSE policies and procedures. All contractor/supplier personnel shall familiarize themselves with the applicable HSE policies and procedures. From time to time, the site manager may undertake a campaign of HSE awareness and promotion in support of this HSE document.

13 REPORTING AND RECORDKEEPING

13.1 *BOEM Reporting Requirements*

When performing work within the Bureau of Ocean Energy Management (BOEM) lease area, BOEM must receive an immediate verbal report and written notification within 15 days for the following incidents:

- Fatalities;
- Incidents that require the evacuation of person(s) from the facility to shore or to another offshore facility;
- Fires and explosions;
- Collisions that result in property or equipment damage greater than $25,000;

  (Collision means the act of a moving vessel (including an aircraft) striking another vessel, or striking a stationary vessel or object. Property or equipment damage means the cost of labor and material to restore all affected items to their condition before the damage, including, but not limited to, the OCS [Outer Continental Shelf] facility, a vessel, a helicopter, or the equipment. It does not include the cost of salvage, cleaning, dry docking, or demurrage)

- Incidents involving structural damage to an OCS facility that is severe enough so that activities on the facility cannot continue until repairs are made;
- Incidents involving crane or personnel/material handling activities if they result in a fatality, injury, structural damage, or significant environmental damage;
- Incidents that damage or disable safety systems or equipment (including firefighting systems);
- Other incidents resulting in property or equipment damage greater than $25,000; and
- Any other incidents involving significant environmental damage or harm.

A written report must be provided within 15 days for:

- Any injuries that result in the injured person not being able to return to work or to all of their normal duties the day after the injury occurred; and
- All incidents that require personnel on the facility to muster for evacuation for reasons other than weather or drills.

The verbal and written report must contain the following:

- Date and time of occurrence;
- Identification and contact information for each lessee, grant holder, or operator;
- Name and telephone number of the contractor and the contractor's representative, if a contractor is involved in the incident or injury;
- Lease number, OCS area, and block;
- Platform/facility name and number, or cable or pipeline segment number;
- Type of incident or injury;
- Activity at time of incident;

- Description of incident, damage, or injury (including days away from work, restricted work, or job transfer), and any corrective action taken; and
- Property or equipment damage estimate (in U.S. dollars).

13.2 *DWSF Reporting Requirements*

In addition to the required BOEM reporting, the following events should be reported to the President, Project Director, and HSE manager as soon as possible except Day Away From Work incidents shall be reported within 6 hours:

- all Work-related incidents from Near Misses and above (see the Occupational Safety and Health Administration [OSHA] categories listed below);
- environmental incidents that were reported to government agencies; and
- lifting incidents dealing with lifts using dedicated lifting equipment.

Reporting should be done by e-mail with the following minimum information:

- Date and time of occurrence;
- Date of the report (if different from the email date);
- Name and phone number of the person writing the report;
- Incident location;
- Type of incident or injury;
- Activity at time of incident;
- Description of incident;
- Incident conditions (weather, etc.);
- Type of injuries or illnesses (with classification if known); and
- Corrective actions taken.

In case of an emergency the reporting shall also be done in accordance with the Emergency Response Procedure for Construction.

The OSHA severity categories and definitions should be used to keep reporting consistency across the Deepwater Wind assets. The categories are:

- Death
- Day Away From Work
- Restricted Work
- Job Transfer

- Medical Treatment (beyond First Aid)[1]
- First Aid[2]
- Near Miss

These metrics should be communicated to the employees. The performance should be measured and the results reported to executive management as a part of executing this document.

14 HSE ASSURANCE

The following assessment methods may be used by the Package Manager to verify compliance with this HSE document:

- Site visits
- HSE audits
- HSE inspections
- Team talks
- Investigation of incidents

The Package Manager should maintain the records of HSE performance and activities.

HSE performance should be part of the annual DWSF company review.

[1] There are several additional injury or illness situations that require recording. Always seek advice from the HSE department for help with case classification, reporting, and recording requirements.

[2] OSHA limits the First Aid case definition to only 14 specific types of injuries or illnesses

Appendices

Appendix 1: Procedures

The following procedures are an integral part of this DWSF Safety Management System:

- Risk Management Procedure (DWW_CORP_PR_002)
- Management of Change (DWW_CORP_PR_004)
- Emergency Response Procedure (DWW_SFWF_PR_005)

RISK MANAGEMENT PROCEDURE

DEEPWATER WIND LLC

Document no: DWW_CORP_PR_002				
By	Revision	Date	Reviewed	Approved
D. Schwartz	(1) approved	Dec 2012	A. Kenney	C. van Beek
C. van Beek	(2) updated	Jul 03 2014	A. Kenney	D. Schwartz
L. Emmons	(3) updated	May 17 2018	R. Billington	C. van Beek

CONTENTS

1. INTRODUCTION

This document describes risk management within Deepwater Wind. Risk management is an important part of Deepwater Wind's management system as it contributes to a timely completion of the company's deliverables within budget and in accordance with specifications. In this document, responsibilities with respect to Risk Management have been defined and methods to execute Risk Management have been established.

2. RESPONSIBILITIES

It is the responsibility of the General Counsel to ensure that the risk management procedure is followed.

General Counsel:
- ensure each project or operation follows the Risk Management procedure
- overview of the risk management register for each project or operation
- update of this procedure as necessary

Project Director/Manager or Operations and Maintenance (O&M) Manager
- To execute risk management in accordance with this procedure

Deepwater Wind employees
- To execute the mitigation actions as defined in the Risk Register
- To update the mitigation status in the Risk Register

3. RISK MANAGEMENT PROCESS

The approach we have taken to manage risks is by following a methodical process by which the team identifies, scores, and ranks the various risks. Ranking (before mitigation) will make use of the following Risk Ranking matrix:

		Impact			
		small	restricted	significant	high
Probability	likely	**III**	II	**I**	**I**
	possible		**III**	II	**I**
	unlikely			**III**	II
	highly unlikely				**III**
		<$1MM	>$1MM and <$4MM	>$4MM and <$10MM	>$10MM
		Consequence			

For risk categories I and II, mitigation actions will be developed. Specific persons, responsible for each mitigation action, will be listed in the Risk Register. The Risk Register will be updated periodically with possible new risks and with the latest status of the mitigation actions.

Risk category III will be monitored, including considering the necessity to change the ranking.

Risks ranked in the green zone will be listed without a mandatory requirement for follow-up.

4. RISK REGISTER

Every project or operation must maintain a Risk Register to track risks and associated mitigation strategies. The Risk Register is a log of all identified risks, their probability and impact to the project or operation, mitigation actions, people responsible for the mitigation actions, and mitigation action status. The Risk Register will be updated on a regular basis. The Risk Register shall be filed in the project or operation file system and copied to the General Counsel.

An example of an extract of a Risk Register has been included in Attachment 1.

ATTACHMENT 1: EXAMPLE RISK REGISTER

Risk			RISK RATING			Mitigation			MITIGATED RISK RATING			
Phase	Number	ID	Probability	Consequence	Rating	Mitigation Code	Actions/Comments	Responsible Party	Probability	Consequence	Rating	Rating after Financial Closure
		DESIGN (Technical Risk)										
D	1	Jacket weight increases above pro-forma	Possible	Significant	II	RR	Industry lessons learned / selection of design consultant	RJB	Unlikely	Significant	III	III
D	2	System voltage instability due to ferroresonance (iron core) reactors	Possible	Significant	II	RR	Reduce by four eyes review of electrical modelling	DPO	Unlikely	Significant	III	III
D	3	CVA and/or LDA action (schedule / cost impact)	Possible	Restricted	III	MM	Manage thru contractor selection and interaction	DPO	Possible	Small		
D	4	Contractor analysis results in a fatigue prone jacket	Possible	Significant	II	RR	Reduce by 3rd Party verification of structural model / CVA	DPO	Unlikely	Significant	III	III
D	5	Integration of European and U.S. design standards	Possible	Significant	II	MM	Manage design interface w/register - agreed standards (CRMC)	DPO	Possible	Small		
		TURBINE PURCHASE										
TP	1	WTG delayed delivery impacts construction schedule	Possible	High	I	MM	Manage thru expediting / de-link resource dependacies / business interruption insurance	RJB	Unlikely	Restricted		
		GENERAL										
G	1	Late permits	Possible	High	I	MM	Contingency plan for late (or) slipped permits	RJB	Possible	Restricted	III	
G	2	Contractual interfaces	Possible	High	I	MM	Create interface management procedures for: (1) Contractual; (2) Organizational; and (3) Physical interface	RJB	possible	Restricted	III	
G	3	Weather delay	Possible	Significant	II	RR/CC	Reduce consequence through weather forecast planning/transfer to contractor / workability study	RJB	Possible	Restricted	III	
G	4	Delayed financial close	Unlikely	High	II	-R	DH for preventing delay/ RJB for building in float in project to allow for this	DH/RJB	Unlikely	Restricted		
G	5	Change orders generally	Likely	Restricted	II	MM	Manage thru Change Control planning / Scope Definition	RJB	Unlikely	Restricted		
G	6	Cable, jacket, turbine interfaces (physical interfaces)	Possible	Significant	II	RR	Constructability design review / Dimension Control	RJB	Possible	Small		
G	7	Post-construction audit by PUC	Likely	Restricted	II	MM	project controls suitable for PUC audit / CVA	RJB	Unlikely	Restricted		
G	8	Drawdown issues w/lenders	Possible	Significant	II	MM	Project Control Planning to define cash call points	RJB	Unlikely	Restricted		
G	9	Loss of key personnel	Possible	Significant	II	-R	Set up staffing plan with "backup" coverage of positions and recruitment strategy	RJB	Unlikely	Restricted		
G	10	Serious safety accident	Unlikely	Significant	III	MM	Pro-emptive and contingency based HSE plan / Safety Culture	RJB	Highly Unlikely	Significant		
G	11	Non-compliance (envir.) during construction	Unlikely	Significant	III	MM	Pro-emptive and contingency based HSE plan / Safety Culture	RJB	Highly Unlikely	Significant		
G	12	No staging area available	Unlikely	Significant	III	RA	Early agreements on Staging Areas	RJB	Unlikely	Small		
G	13	Transportation loss-jacket/turbine	Highly Unlikely	High	III	IT	Insure against loss / partial business interruption	RJB	Highly Unlikely	Significant		
G	14	Onerous permit conditions	Possible	Restricted	III	-R	Secure permits prior to Financial Close / mgmt reserves / manage schedule / DWW control of decision points	AK/RJB	Possible	Small		
G	15	Delay in beach construction past Memorial Day [May 15?]	Possible	Restricted	III	-R	Include float in beach pull activities / contingency plan	RJB	Unlikely	Restricted		
G	16	Allision / Collision	Unlikely	Significant	III	IT	Vessel insurance / business interruption insurance	RJB	Unlikely	Small		
G	17	Supplier bankruptcy	Highly Unlikely	High	III	IT	Performance Bonding / business interruption insurance / credit checks	RJB	Highly Unlikely	Restricted		
G	18	Labor unrest/strawil.	Highly Unlikely	Small		MM	Maintain relationships / favorable labor market conditions	RJB	Highly Unlikely	Small		
G	19	Contract disputes (cost/sch)	Unlikely	Restricted		MM	Black Swan event managed by DWW	RJB	Unlikely	Restricted		
		TURBINE ERECTION										
TE	1	Availability of turbine vessel	Unlikely	High	II	RR	Secure provisional vessel commitment by financial close / and/or Siemens supply vessel	RJB	Unlikely	Restricted		
TE	2	Lifting risk	Unlikely	Significant	III	RR	Design lifts / ensure foundation, towers, turbine conform	RJB	Unlikely	Restricted		
TE	3	Serial turbine blades defects	Highly Unlikely	High	III	IT	Warranty		Highly Unlikely	High	III	III
		FOUNDATIONS										
F	1	Late jackets because of change orders	Unlikely	High	II	RR	Schedule Float / Early jacket construction	RJB	Unlikely	High	II	
F	2	Steel prices rise	Possible	Significant	II	-R	Probablistic cost and schedule risk analysis at financial close / Monitor market for order placement	RJB	Possible	Small		
F	3	Unable to level foundations to TSA specifications	Unlikely	High	II	RR	Reduce in design by separate jacket and deck	RJB	Highly Unlikely	High	III	III
F	4	Difficulties in piling	Unlikely	Significant	III	MM	Reduce by borings and installation equipment selection	RJB	Unlikely	Significant	III	III
F	5	Jacket design problems because of bad Siemens data	Possible	Restricted	III	RR	CVA	RJB	Unlikely	Restricted		
		INTER-ARRAY CABLE										
I	1	Achieving permitted burial depth	Unlikely	Significant	III	CC	(1) Make-right requirements in contract; (2) Owner's engineer review of design and installation (3) Wide ROW w/provisions to re-route when plow hits obstructions	RJB	Unlikely	Restricted		
I	2	Cable damage during install	Unlikely	Significant	III	-R	Engineer the process /agreement with installtion contractor / splice kit in spares	RJB	Unlikely	Restricted		
I	3	Equipment availability (vessel, plow, etc.)	Unlikely	High	II	CC	LDs in Vendor contract; actively review schedule and equipment list, business interruption insurance		Highly Unlikely	Significant		
		TESTING/COMMISSIONING										
TC	1	Delay energizing BITS	Possible	High	I	IT	Business Interruption Insurance / contingency with temporary generators	PJM	Possible	Restricted	III	III

MANAGEMENT OF CHANGE PROCEDURE

DEEPWATER WIND LLC

Document no: DWW_CORP_PR_004				
By	Revision	Date	Reviewed	Approved
C. van Beek	(1) approved	Jun 2012	P. Murphy	D.Schwartz
C. van Beek	(2) approved	Jun 24 2014	P. Murphy	B.Billington
L. Emmons	(3) revision to reflect operations	May 13, 2018	R. Billington	C. van Beek

Contents

1. INTRODUCTION

This document describes the Management of Change (MoC) process within Deepwater Wind. MoC is an important part of Deepwater Wind's management system as it safeguards project goals, quality, and HSE standards in case of deviation from an agreed plan. In this document, responsibilities with respect to MoC have been defined and methods to execute MoC have been established.

2. RESPONSIBILITIES

It is the responsibility of the Project Manager to ensure that for each project the MoC procedure is followed. Likewise, it is the responsibility of the Operations and Maintenance (O&M) Manager to ensure that for their operation the MoC procedure is followed.

President:

- To keep this procedure up-to-date

Project Manager/Director or O&M Manager:

- Ensure each project/operation follows the MoC procedure
- Approve changes in accordance with the MoC procedure

Site Representative:

- To follow the MoC procedure in case of deviations from the agreed plans
- Approve changes in accordance with the MoC procedure

3. MANAGEMENT OF CHANGE POLICY

A well-managed project or operation requires that a formal MoC process be used throughout the various stages to manage and control changes in the scope, execution plan, and other important components. The objective of this section is to describe this process and explain how it is best applied.

The Company's bias, once key documents are approved, is to rigorously manage for NO Changes.

Despite best efforts, proposals to make changes are likely to occur and require consistent treatment. Changes can arise due to many circumstances: external events; omissions in defining the scope; price or delivery changes; equipment changes; procedure changes; or intentional changes, such as to improve quality or to respond to or reduce an identified risk.

The project definition, basis of design, execution plans, budget, and schedule are the primary baselines from which changes can be controlled. For operations, it is the as-built structure and equipment along with the initial set of procedures. Strict control of change and a bias for NO Change assures that the safety and economic validity is maintained throughout its execution and delivers a project or operation that meets the defined objectives. In addition, it underpins the key

principle of standardization. The bias for NO Change is introduced progressively as documents are approved or “frozen”.

The principles of the MoC system are:

- All changes to approved documents will be subject to a MoC process.
- The process will define authority levels, including financial limits, for approval of change.
- The process will be implemented with appropriate levels of control and review applied to differing levels/categories of change.
- The overall system for MoC will be managed by the Project Manager/Director or O&M Manager.

Interfaces with Contractor systems

When a contractor proposed change is offered for Company approval, in the form of a Design Change Note or Concession Request or Site Query, it should trigger the registration of the change in the Company MoC system. A key element of the process is to evaluate the safety impact and route the proposed change to the appropriate personnel for evaluation.

Items typically subject to the MoC process include, but are not limited to:

- Key documents that have been approved for design or construction such as Basis of Design, Process and Instrumentation Diagrams (P&IDs), layouts, electrical hazardous area drawings, electrical one-lines, Cause and Effect drawings, and Regulatory drawings that have been submitted for approval. Changes that could impact the findings or results of hazard management studies such as Hazardous Operations (HAZOPS), Hazards Identification (HAZIDS), Fire and Explosion studies, Egress and Evacuation studies, and others. Such a change would require a review because, even though it may not appear on a frozen key document, it still could impact these studies or the resulting recommendations. For operations, any change that can impact the assumptions made in the project studies must be reviewed.
- Proposed changes to specifications or to key personnel or organizational structure.

Changes to detailed construction plans such as piping and wiring routing drawings may be approved by the Site Representatives, providing they have no safety or significant cost or schedule implications, but the interfaces with such systems should be defined and agreed upon with the Project Manager/Director. All operational changes must be approved by the O&M Manager.

4. MANAGEMENT OF CHANGE PROCESS

The MoC process involves identification, screening, documentation, review, approval, and implementation, as shown in Figure 1.

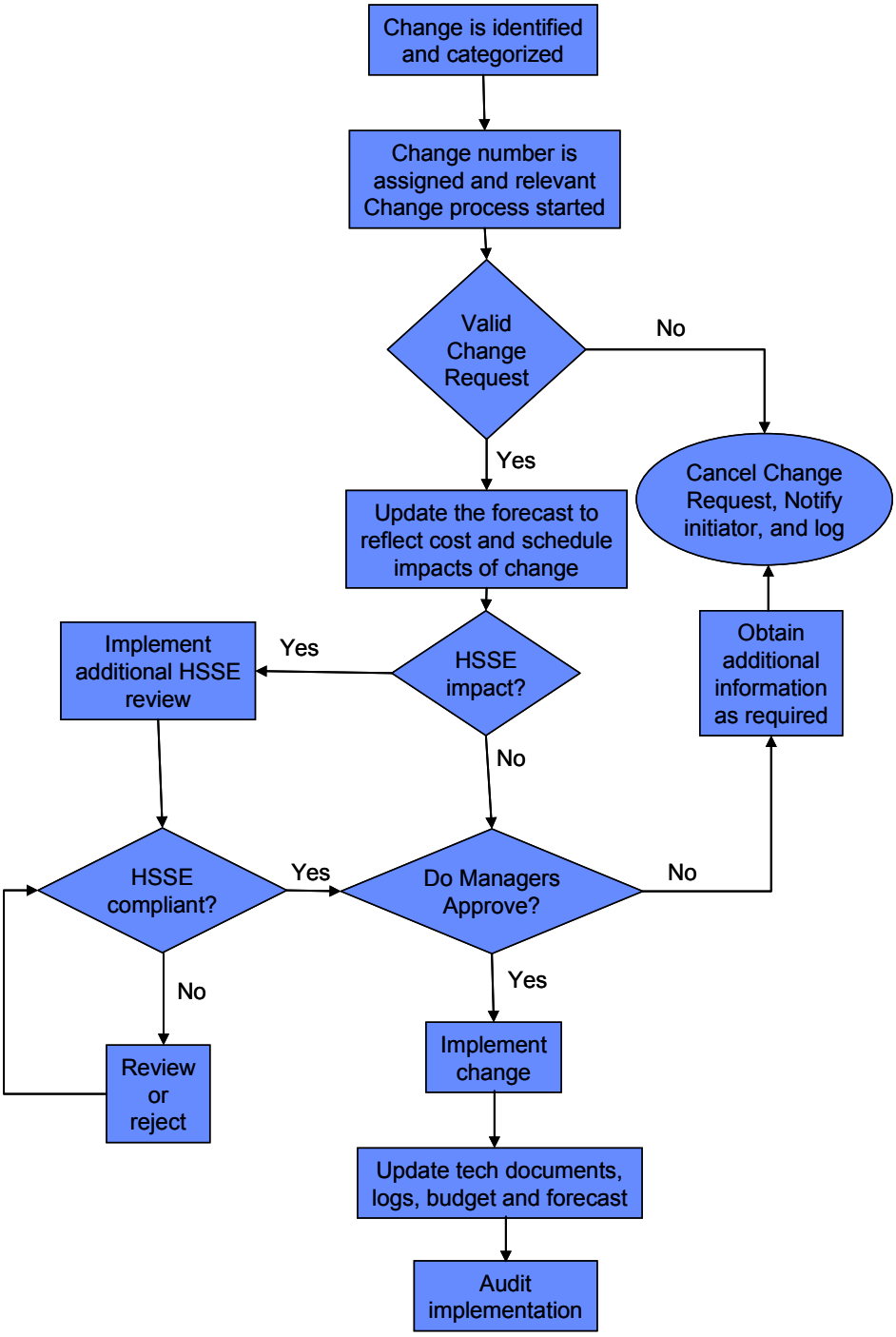


Figure 2 - Processing a change

Categories of Changes:

Scope changes
Scope Changes fundamentally impact the project boundaries, as described in source documents such as the Basis of Design. Major changes such as these require approval by the Project Manager/Director, and possibly at the Project Board level.

Changes within scope
These changes do not alter the fundamental concept but may affect approved designs or intermediate milestone dates or have safety implications within the current project scope. The processing of such changes depends on their nature and they can be classified in one of the following ways:

Modifications
- Those changes that alter existing designs or the as-built structure and may impact safety or operability and probably will affect cost forecasts and schedules.
- These require a robust evaluation process prior to being submitted for approval by the appropriate authority.

Changes to execution plans and operating procedures
- During construction and operations, circumstances can require changes to the work plans. Normally these changes do not impact the Project Definition and do not alter existing designs or as-built structures but may impact safety, cost forecasts, and schedules.
- These changes must be documented and require approval by the Site Manager for projects and the O&M Manager for operations. In case applicable HAZIDS are affected, a specific HAZID has to be conducted to ensure compliance with the Health and Safety standards.

For each of the above changes the steps should be followed in accordance with the flow diagram of Figure 2.

5. REQUIREMENTS AND GOOD PRACTICES

The following requirements and good practices apply throughout the project or operation.

- Communicate the roles and responsibilities regarding management of change to the team and ensure these roles and responsibilities are understood.
- Ensure team members fully understand the categories of change.
- Agree upon the extent to which the system will be implemented by contractors or how contractors' systems will be integrated with the MoC process.
- Ensure the MoC system captures and tracks changes to performance targets.
- **Seek to eliminate all but essential changes once baselines have been established and adopt a 'management of no change' mind set once documents have been approved.**
  - Historically, the full impact of change is significantly underestimated.
- **Reflect all pending and approved changes in the forecast and schedule.**
  - Synchronize the Management of Change system with the other control systems in place, particularly those dealing with Cost, Schedule, and Risk Management.
- **During Commissioning, the engineering team must interface with the Commissioning & Start-Up and Operations teams in order to:**
  - Report change status.
  - Supply the supporting documentation to verify that changes have been implemented as approved and are fully closed out.
  - Code outstanding changes to process systems so these align with Commissioning.
- **Participate in contractors' change process.**
  - Challenge the contractor to develop the optimum solution of the change.
  - Audit the engineering contractor's change management system and its interface with the Company management of change system so that all changes are processed appropriately.

SOUTH FORK WIND FARM

South Fork Wind Farm

Emergency Response Procedure

Construction

DEEPWATER WIND SOUTH FORK, LLC

Document no: DWW_SFWF_PR_005				
By	Revision	Date	Reviewed	Approved
L. Emmons	1	May 13, 2018	B. Billington	C. van Beek

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Appendices

1 Emergency Response Expectations

This document describes the measures used by Deepwater Wind South Fork, LLC (DWSF) during the construction phase to bring an emergency situation under control and instigate the initial recovery.

Responsibilities and procedures should be clearly defined and training conducted to verify in the event of an emergency:

- All personnel are mustered in a safe location away from the incident.
- The emergency response team evaluates the extent of the incident, takes care that any casualty receives the appropriate treatment, takes measures as may be appropriate to control the emergency, informs the appropriate emergency forces and logs the events and actions in an emergency report.
- Personnel are evacuated in a safe and orderly manner should the decision be made to abandon a unit or location.

1.1 Emergency Response Philosophy

DWSF will carry out all of its business activities with a primary focus that the health, safety and well-being of its employees, contractors and third parties effected by its activities is paramount. DWSF will plan activities and in doing so incorporate controlling measures to mitigate against foreseeable emergencies.

1.2 Bridging Documents

Integral to this planning will be the selection of competent employees and contractors, along with the establishment of clear communication lines and individual responsibilities. Each main contractor shall have fit-for purpose emergency response procedures for its own operations.

An emergency response bridging document should be developed that ties the emergency response procedures of the main contractors and DWSF together.

This bridging document and applicable procedures shall be communicated and practiced.

2 Command and Communication

The overall Deepwater Wind Emergency Response Team (DWWERT) organization diagram for both onshore and offshore is shown in Figure 1.

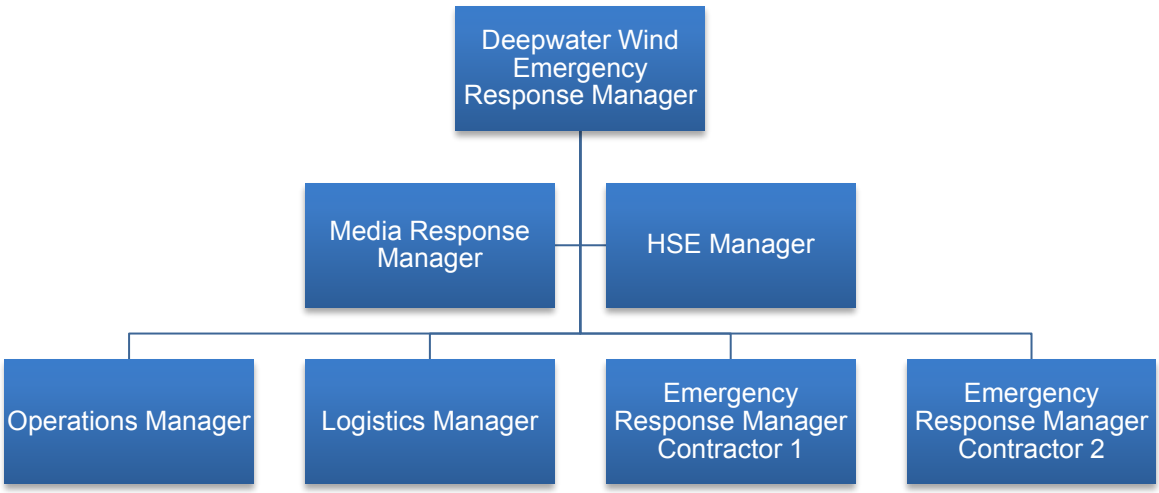


Figure 1

- Primary DWW Emergency Response Manager:
  - Chris van Beek – (401) 339-6495
- Alternate 1 Emergency Response Manager:
  - Bob Billington – (979) 530-2709
- Alternate 2 Emergency Response Manager:
  - Paul Murphy – (412) 901-6587

3 Training for Emergencies

3.1 Emergency Response Training

All personnel are to have the emergency response procedures explained to them during the induction before starting working.

Personnel who could be involved in emergency response duties should be competent in the roles and responsibilities they are to undertake. Individual training needs for response team members should be identified and implemented which may include:

- Communication equipment use.
- Ladder rescue.
- Self-rescue techniques.
- Confined space awareness training.
- Confined space rescue techniques.
- Authorized gas tester for gas tester operator

Mariners on vessels should have the STCW95 training.

3.2 Exercises

A full emergency response exercise should be conducted whenever commencing operations within a new environment, significant personnel changes have occurred, or new hazards have been introduced to normal operations. Wherever possible, this should include real time interaction between DWWERM, contractors' onshore/offshore units, and the emergency services, especially those involved in search and rescue.

Regular emergency drills should be carried out and a record of the training drills conducted kept. The drills should pertain to the type of work being performed at the site and should include (if relevant):

- Confined space rescue
- Ladder rescue
- Casualty handling
- Oil spill response
- Damage control
- Fire fighting
- First aid

3.3 Lessons Learned

After any planned or unplanned actions requiring the use of the emergency procedures, all forms and records should be collected and kept. An evaluation should be made to establish what processes have been effective and what needs to be improved. Any actions arising should be recorded and their implementation monitored.

4 Emergency Procedures

The most likely incident scenarios and the associated response activities are summarized below. Most incidents will need to be reported to the Bureau of Ocean Energy Management (BOEM). Additional details for reporting methods and requirements can be found in Appendices 1 – 4.

4.1 Vessel Collision:

- In the event of a vessel collision the United States Coast Guard Rescue Coordination Center (USCG RCC) should be contacted using one of the methods described in Appendix 1.
- A check should be made to verify all personnel are accounted for.
- The condition of the vessel involved in the collision should be ascertained and if required able assistance given.
- The vessels emergency procedures should be followed.

4.2 Man Overboard:

- In the event of a man overboard (MOB) situation, the vessels MOB procedure should be followed including launching either a smoke marker buoy or life ring with light. The

crew transport vessel procedure should be used if it is a fall from the platform. A PAN/PAN alert should be given on channel 16 VHF. Appropriate recovery and rescue equipment should be made ready.

- The casualty should be recovered and first aid administered if required. The casualty should be kept warm and returned to shore where medical assistance and examination can be sourced.
- In the event the casualty cannot immediately be located, the USCG RCC and DWWERT should be alerted. Assistance in the search should be requested from other vessels in the area.

4.3 Fire:

- For vessel fires, the safety officer shall be informed immediately as per the emergency procedures of the vessel. Attempts can be made to extinguish the fire providing it is safe to do so and only to the person's level of training in firefighting. Following a fire, no confined spaces should be entered unless it can be ascertained that the atmosphere is clean and presents no risk to personnel. The possibility of noxious and or toxic fumes should be considered from the resulting fire.
- The vessels emergency procedures should be followed that normally involve the following measures:
- If the fire cannot be extinguished using the portable firefighting equipment the crew should relocate to a safe place or if that is not possible the crew shall be evacuated immediately and the USCG RCC contacted.
- A check should be made to verify all personnel are accounted for.
- The vessel emergency response manager shall inform the corporate emergency response manager and the DWWERT. Further actions should be in line with the emergency response bridging document.

4.4 Bomb Threat

- In the event of a bomb threat, the details of the threat should be recorded. The facility should be evacuated and company procedures should be followed for reporting to senior management.
- The vessel should return to port. During this time, a search of the vessel should be made to ascertain the validity of the threat. Under no circumstances are any unidentified objects to be disturbed.
- In all cases, the local authorities either police, port security officials, and/or the USCG must be informed of the threat.
- The vessel emergency response manager shall inform the corporate emergency response manager and the DWWERT. Further actions should be in line with the emergency response bridging document.

4.5 Chemical/Oil Spill

- The vessel is to have sufficient chemical/oil spill response equipment to handle a spill of the magnitude dictated by the amount of oil/fuel/chemical that is being carried.
- The vessel chemical/oil spill response procedure should be followed.

- Personnel on the site or vessel should be aware of the equipment, its location and how to use/deploy the equipment. Checks of the equipment should be made on a regular basis to verify its integrity.
- In the event of a chemical/oil spill, every effort should be made by the personnel on the site or vessel to limit the extent of the leak and limit the effects on the environment. Personnel on the site or vessel are expected to assist in the cleanup of any oil that spills to the level of their training.
- The vessel emergency response manager shall inform the corporate emergency response manager and the DWWERT. Further actions should be in line with the emergency response bridging document.

Reference: *The Environmental Protection Agency (EPA) has established requirements to report spills to navigable waters or adjoining shorelines. EPA has determined that discharges of oil in quantities that may be harmful to public health or the environment include those that:*

Violate applicable water quality standards;

Cause a film or "sheen" upon, or discoloration of the surface of the water or adjoining shorelines; or

Cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Require that any chemical that is spilled, onshore or offshore, that meets the reporting quantity (RQ) must be reported.

Further guidance is provided in Appendix 2.

4.6 Adverse Weather

Adverse weather (high wind, precipitation, fog, temperature) pose significant risk to both onshore and offshore works; however, the effects are more pronounced in the offshore environment.

Before any offshore works commence, weather forecasts should be consulted and a sufficient weather window established including a safety time margin to allow the proposed works to be completed and the support craft reaching the safety of sheltered waters.

Weather conditions can have more profound effect on certain activities such as lifting operations, transferring of personnel, and working at height. The weather conditions should form part of the task based risk assessment before works begin.

- In the event of unexpected weather deterioration during operation and maintenance activities the works should be suspended in good enough time to allow personnel to relocate to a safe location.
- Consideration should be given to the possibility of having supplies on the offshore location for use in the event of a rapid deterioration in the weather or the support vessel having mechanical problems which prevented the crew being taken off the offshore location. These supplies should include but not be limited to food stuffs, drinks, water,

warm clothing, and spare radio batteries. These items could be brought with the crew and this possibility should be discussed during task risk assessment and tool box talk.

4.7 Serious Injury / Fatality

In the case of a serious injury/fatality occurring, the following procedures should be undertaken:

- The USCG RCC is to be informed as soon as possible if the incident occurs over water by the owner/operator of the vessel.
- The Occupational Safety and Health Administration (OSHA) must be notified in the event of any fatality (within 8 hours) or serious injury that requires hospitalization, amputation, or the loss of an eye within 24 hours by the operator responsible for the site if the incident occurs within 3 miles of shore.
- First aid personnel are to remain with the injured person until the emergency services arrive.
- The police are to be informed.
- The area where the incident occurred is to be isolated and to be kept as near as possible the same as when the incident occurred. If anything is to be moved, then take photographs of the original condition. Notwithstanding the above, nothing should be removed from the site of a serious injury or fatality unless the safety of personal or the installation is compromised by failing to do so.
- Only move the injured at-risk person if there is a real risk to his (and others attending him) safety.
- Report the incident to vessel emergency response manager who shall then inform the corporate emergency response manager and the DWWERT as soon as reasonably possible. Take witness statements while it is fresh in their minds. Further actions should be in line with the emergency response bridging document.

Appendix 1 - Methods for Reporting Emergencies

U.S. Coast Guard Rescue Coordination Center

By Telephone	Look in the front of your telephone directory for an emergency number listing for the U. S. Coast Guard or Dial 911 or Call the nearest U.S. Coast Guard Rescue Coordination Center: RCC Norfolk +17573986231
By VHF-FM Radio VHF-FM radios are the preferred method for reporting emergencies from vessels on the water.	Call U.S. Coast Guard on **Channel 16 VHF-FM** (156.8 MHz) Emergency Radio Call Procedures: 1. Make sure radio is on 2. Select channel 16 3. Press/hold the transmit button 4. Clearly say: "MAYDAY MAYDAY MAYDAY" 5. Also give: - Vessel name and/or description - Position and/or location - Nature of emergency - Number of people on board 6. Release transmit button 7. Wait for 10 seconds - if NO response repeat call.
By Cellular Phone Cellular phones are an acceptable secondary means of calling the Coast Guard.	Look in the front of your telephone directory for an emergency number listing for the U. S. Coast Guard or Dial 911 or Call the nearest U. S. Coast Guard Rescue Coordination Center listed above.
By Email	**Do NOT send it via email**, contact the Coast Guard via telephone or radio.
By Other Methods	The Global Maritime Distress and Safety System (GMDSS) provides a number of additional means for contacting or alerting USCG department of SAR authorities. These include INMARSAT, SARSAT (EPIRBs, ELTs, and PLBs), MF-DSC, HF-DSC, etc. In addition, for vessels or persons in distress there are nationally and internationally accepted/prescribed visual and sound distress signals (flares, horns, mirrors, flashing lights, flags, etc).

OSHA

OSHA By Telephone	**Regional Office** Federal Building 201 Varick Street, Room 670 New York, New York 10014 (212) 337-2378 (212) 337-2371 FAX **24-hour hotline** 1-800-321-6742

National Response Center (NRC)

NRC By Telephone	1-800-424-8802 or (202) 267-2675

DWWERT

DWSF / DWWERT By Telephone	Primary DWW Emergency Response Manager: Chris van Beek – (401) 339-6495 Alternate 1 Emergency Response Manager: Bob Billington – (979) 530-2709 Alternate 2 Emergency Response Manager: Paul Murphy – (412) 901-6587
By Email	cvanbeek@dwwind.com bbillington@dwwwind.com pmurphy@dwwind.com with a copy to swaker@dwwind.com

Appendix 2 - Oil Spill Reporting Requirements

Section 103 of CERCLA requires the person in charge of a facility or vessel, as soon as he or she has knowledge of a release of a hazardous substance in an amount equal to or greater than a Reportable Quantity (RQ), to report the release immediately to the National Response Center (NRC). The NRC number is 1-800-424-8802, or (202) 267-2675.

EPA has established requirements to report spills to navigable waters or adjoining shorelines. EPA has determined that discharges of oil in quantities that may be harmful to public health or the environment include those that:

- Violate applicable water quality standards;
- Cause a film or "sheen" upon, or discoloration of the surface of the water or adjoining shorelines; or
- Cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Appendix 3 - Reporting Requirements to BOEM

BOEM must receive an immediate verbal report and written notification within 15 days for the following incidents for work conducted within the lease area:

- Fatalities;
- Incidents that require the evacuation of person(s) from the facility to shore or to another offshore facility;
- Fires and explosions;
- Collisions that result in property or equipment damage greater than $25,000;

(Collision means the act of a moving vessel (including an aircraft) striking another vessel, or striking a stationary vessel or object. Property or equipment damage means the cost of labor and material to restore all affected items to their condition before the damage, including, but not limited to, the OCS facility, a vessel, a helicopter, or the equipment. It does not include the cost of salvage, cleaning, dry docking, or demurrage)

- Incidents involving structural damage to a DWSF facility that is severe enough so that activities on the facility cannot continue until repairs are made;
- Incidents involving crane or personnel/material handling activities, if they result in a fatality, injury, structural damage, or significant environmental damage;
- Incidents that damage or disable safety systems or equipment (including firefighting systems);
- Other incidents resulting in property or equipment damage greater than $25,000; and
- Any other incidents involving significant environmental damage or harm.

A written report must be provided within 15 days for:

- Any injuries that result in the injured person not being able to return to work or to all of their normal duties the day after the injury occurred; and
- All incidents that require personnel on the facility to muster for evacuation for reasons other than weather or drills.

The verbal and written report must contain the following:

- Date and time of occurrence;
- Identification and contact information for each lessee, grant holder, or operator;
- Name and telephone number of the contractor and the contractor’s representative, if a contractor is involved in the incident or injury;
- Lease number, OCS area, and block;
- Platform/facility name and number, or cable or pipeline segment number;
- Type of incident or injury;
- Activity at time of incident;
- Description of incident, damage, or injury (including days away from work, restricted work, or job transfer), and any corrective action taken; and
- Property or equipment damage estimate (in U.S. dollars).

Appendix 4 - Reporting Requirements to DWSF

Notify the DWWERT as soon as possible whenever the BOEM or any other agency requires notification. In addition to the required regulatory reporting, all work-related incidents from near misses and above should be reported as specified in the DWSF Safety Management System for Construction.

Verbal notification shall be followed up by a written e-mail within 48 hours after the incident providing the same information specified in Appendix 3. The e-mail shall be sent to: cvanbeek@dwwind.com, bbillington@dwwwind.com and pmurphy@dwwind.com with a copy to swaker@dwwind.com.

SOUTH FORK WIND FARM

SOUTH FORK WIND FARM

SAFETY MANAGEMENT SYSTEM

OPERATIONS & MAINTENANCE

DEEPWATER WIND SOUTH FORK, LLC

Document no: DWW_SFWF_OP_011				
Created by/ Revised by	Date	Revision no	Checked by	Approved by
L. Emmons	December 2017	0	R. Billington	C. van Beek
L. Emmons	May 2018	1	R. Billington	C. van Beek

SOUTH FORK WIND FARM

SAFETY MANAGEMENT SYSTEM

Contents

Appendices

Appendix 1: Procedures

Definitions, Abbreviations, and Acronyms

Term	Description
Authorized Employee	An employee who locks out or tags out machines or equipment to perform servicing or maintenance on that machine or equipment
BOEM	Bureau of Ocean Energy Management
CCTV	Closed-circuit Television
Confined Space	A space large enough and so configured that an employee can bodily enter and perform assigned work, has limited or restricted means for entry or exit, and is not designed for continuous employee occupancy
DAFW	Day Away From Work
DWSF	Deepwater Wind South Fork LLC
Hazard Assessment	The evaluation of a work place, or work situation, as to the potential for hazards that an employee may encounter while performing the job
HSE	Health, Safety, and Environment
Job Safety Analysis (JSA)	Technique to identify the dangers of specific tasks to reduce the risk of injury to workers
Lockout/Tagout (LOTO)	Practices necessary to disable machinery or equipment thereby preventing the release of hazardous energy while employees perform servicing and maintenance activities
MSDS	Material Safety Data Sheet
Near Miss	An incident in which no property was damaged and no personal injury was sustained but where, given a slight shift in time or position, damage or injury easily could have occurred
OCS	Outer Continental Shelf
OSHA	Occupational Safety and Health Administration
Permit-required Confined Space	A Confined Space that has one or more of the following characteristics: (1) Contains or has a potential to contain a hazardous atmosphere; (2) Contains a material that has the potential for engulfing an entrant; (3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or (4) Contains any other recognized serious safety or health hazard
PPE	Personal protective equipment
Qualified Person (electrical)	One who has received training in and has demonstrated skills and knowledge in the construction and operation of electric equipment and installations and the hazards involved
SCADA	Single Supervisory Control and Data Acquisition
SFWF	South Fork Wind Farm
Tool Box Talk	A briefing of workers prior to work commencing that defines the tasks, potential hazards, and safeguards to be employed
Transition Piece	The cylindrical portion of the foundation that transitions from the wind turbine structure to the foundation structure.
Work-related	The work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness

1 PURPOSE

This document outlines the required safe work practices operators and contractors must follow once the South Fork Wind Farm (SFWF) commences operations. Everyone working where Deepwater Wind South Fork LLC (DWSF) directly supervises the day-to-day work (office building, control room, platform foundation, etc.) must follow the requirements specified in this document. Many work activities are further supported by specific operating procedures that must be used when performing those tasks. Contractors that provide day-to-day supervision for their work activities (turbines, ferry, contractor use of the foundation and its crane, etc.) shall follow their own procedures that meet or exceed the requirements specified in this document.

The Safety Management System for the construction phase is governed by document DWW_SFWF_PR_004.

2 HSE POLICY, OBJECTIVES AND PRINCIPLES

2.1 *Deepwater Wind Health, Safety, and Environment Policy*

DEEPWATERWIND
Clean energy is just over the horizon.

Deepwater Wind Policy: Health, Safety, and the Environment (HSE)

Our goal is to create a working environment such that we cause

No harm to people, wildlife or the environment.

To achieve this, we will:

- Always comply with the law or our own standards, whichever are more rigorous;
- Work to proactively mitigate risks and continuously improve our operations;
- Set goals and targets, and measure performance against them;
- Hold ourselves and our contractors accountable to meet our expectations; and
- Communicate openly with those who may be affected by our activities.

Safe operations in all company activities is a core value of Deepwater Wind. If operational results and safety ever come into conflict, we all have a responsibility to choose safety over operational results and Deepwater Wind will support that choice.

Jeffrey Grybowski
Chief Executive Officer

01/28/18
Date

2.2 *DWSF HSE Objectives*

The Health, Safety, and Environment (HSE) objectives for DWSF are:

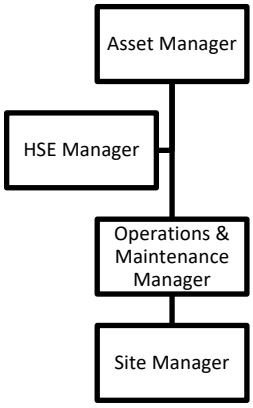
- To achieve a target of zero Day Away From Work incidents;
- To achieve a target of zero Restricted Work, Job Transfer, and Medical Treatment incidents;
- To achieve a target of zero Work-related illnesses;
- To minimize serious near miss incidents; and
- To achieve a target of zero recordable environmental incidents (e.g., no reportable spills, no environmental agency notifiable incidents).

2.3 *HSE Principles*

The following are the guiding HSE principles within DWSF:

- Maintain the safest reasonably practicable working environment;
- Encourage everyone to stop work if they are not sure that the work is being executed in a safe manner;
- Verify that personnel are safety aware and trained for their respective roles;
- Assess potential hazards, implement the necessary controls when practicable, and verify personnel are aware of the hazards;
- Encourage reporting of Near Miss incidents to allow the communication and implementation of preventative measures to avoid their re-occurrence;
- Investigate and communicate the learnings from significant incidents to reduce the occurrence of related incidents;
- Comply with applicable laws and regulations;
- Promote HSE compliance with this document to bring about improvements in HSE behavior and performance;
- Respect the marine environment;
- Verify that contractors work in accordance with their company's HSE procedure provided it meets the expectations established in this document; and
- Prohibit weapons, drugs, or alcohol in our operations.

3 ORGANIZATION



4 HSE RESPONSIBILITIES

4.1 *Asset Manager*

The Asset Manager is responsible for keeping this document up to date.

4.2 *Operations & Maintenance Manager*

The Operations and Maintenance (O&M) Manager is responsible for:

- Verifying adherence to this document and maintaining and reporting the HSE metrics;
- Reviewing contractor HSE procedures to verify they are compliant with this document;
- Confirming adequate resources are available to perform the work safely;
- Verifying the follow-up on risk assessment mitigation actions;
- Ensuring that the investigations of significant incidents are complete and recommendations are being implemented;
- Verifying site inductions are performed; and
- Ensuring that HSE assessments to confirm compliance are being conducted.

4.3 *Contractors*

Contractors are responsible for:

- Maintaining procedures that meet the minimum expectations set out in this document, the applicable regulations, and the general industry standards;
- Providing an occupational health system appropriate for the work executed for DWSF;
- Every contractor will have a system for a prudent percentage of personnel trained as first responders;
- Executing work in compliance with their approved procedures; and
- Verifying their employees and subcontractors are properly trained and comply with their procedures.

4.4 *All Individuals*

Everyone is responsible for always working safely and will:

- Observe established rules, regulations, and procedures and actively support safety;
- Work in a manner that protects his/her own health and safety;
- Follow instructions and directions given;
- Stop any work they perceive is unsafe;
- Report all incidents, including Near Misses*;*
- Maintain skills and knowledge to perform work competently; and
- Attend and take an active part in HSE meetings.

5 CONTRACTOR MANAGEMENT

In general, most of the work will be executed by contractors and suppliers. Contractor/suppliers that will have employees working on the SFWF sites, have signed a DWSF contract with a value of $250,000 or higher, or provide services that are HSE critical for the SFWF must as a minimum follow this document. The O&M Manager shall, in co-operation with the HSE Manager, review contractor/supplier HSE procedures to verify that they are compliant with this document. Provided that the contractor/supplier's HSE procedure is compliant with this document, work shall be executed in accordance with contractor/supplier's HSE procedure. The contactor's ability to perform the work safely will be one of the criteria used to select the approved contractor.

The contractor's procedures must meet the expectations set out in this document, the applicable regulations, and the general industry standards at a minimum. The following work practices along with the associated employee training requirements should be addressed if appropriate for the contractor's scope of work:

- Confined space
- Electrical safety including Lockout/Tagout
- Diving
- Emergency response
- Environmental compliance
- Fire prevention
- Ground disturbance
- Hazard communication
- Offshore transfer
- Management of change
- Material handling
- Permit to work
- Personal protective equipment (PPE)
- Working at heights

6 RISK ASSESSMENT AND MANAGEMENT

DWSF will conduct risk assessments of major work scopes to assess potential HSE issues against the likelihood of their occurrence, consequences if they occur, and impact. Results of these risk assessments should be documented

and reviewed on a periodic basis to verify progress on the mitigation actions. Reference the Risk Management Procedure in Appendix 1.

7 MANAGEMENT OF CHANGE

Whenever a substantive change is made to either facilities, documentation, personnel, or operations, the changes should be assessed to verify that the HSE risks are identified and managed during such changes. The procedure includes the approval, implementation, and tracking requirements. Reference the Management of Change Procedure in Appendix 1.

8 EQUIPMENT STANDARDS

DWSF employees and contractors/suppliers are responsible for verifying that the equipment and materials they deliver and/or use are fit-for-purpose and meet with both statutory and DWSF requirements.

9 SAFE WORK PRACTICES

9.1 *Confined Space*

In general, the Transition Piece is the only identified Confined Space in DWSF and should not require a permit to enter. The grated floor connecting the space with the wind tower entry way allows for non-segregated airflow. The quantity of fluids that may spill into the Transition Piece should not be hazardous per their Material Data Safety Sheets. Therefore, it is unlikely for a hazardous atmosphere to exist. Periodic testing can be conducted to confirm the atmosphere remains non-hazardous. This determination should be reconsidered if the quantity or type of chemicals change in the future.

9.2 *Electrical Safety*

Live equipment should be de-energized before an employee works on or near them, unless it can be demonstrated that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground do not need to be de-energized if there will not be an increased exposure to electrical burns or explosion due to electric arcs.

The Lockout/Tagout procedure should be used by a Qualified Person to de-energize equipment above 50 volts.

When using portable electric equipment, it should be in good condition with appropriate safeguards.

DWSF does not intend to have its employees work on live electrical components above 50 volts. Contractors performing such work should have procedures that include the following requirements.

If the exposed live equipment above 50 volts is not de-energized, safety-related work practices should be used to protect employees against contact with any part of their body or indirectly through some other conductive object. The work practices that are used should be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts. The following requirements may apply:

- Conduct a Tool Box Talk;
- Perform a Hazard Assessment (arc flash, shock, etc.);
- Determine required safe guards, permits, and safe work practices to follow;
- Identify emergency response requirements;
- Use appropriate PPE to protect against arc flash and shock hazards; and
- Verify that the required training is current for persons doing the work.

9.3 *Fire Prevention*

DWSF's facility design has minimal fire risk and is normally unmanned. Electrical circuits may short and cause a fire, but the failsafe design should limit the extent of the damage and risk to employees.

Fire detection and alarms systems will follow NFPA-70/72 for unmanned facilities.

The wind turbines and substations are not normally manned. Equipment fire and smoke detection systems will be in enclosed areas with potentially combustible material (e.g., liquid filled transformers, switchgear, hydraulic accumulator fluid and pumps, grease systems). In general, low or non-combustible materials will be specified to minimize the possibility of a combustion event during normal/abnormal modes of operation. Shutdown and isolation of equipment will be the first level of fire defense which would be activated by early detection equipment. Small and local fires that might occur during a period of facility occupation would be managed with Class AB & C hand-held extinguishing equipment.

Equipment that could present a significant fire risk (e.g., reactors, large power transformers) and for which hand-held devices would be ineffective would be fitted with local equipment suppression systems (CO2, FM-200, etc.) and/or passive fire barriers. Such systems and/or fire barriers would be selected primarily for protection of personnel to escape an affected area followed by protection of equipment or assets. Activation of local suppression systems would generally be performed manually but may be automated for instances in which automation would achieve greater personnel safety. Employees, contractors and operators would be trained on effective detection monitoring, response actions and use of all local suppression systems. All active fire suppression systems and mobile passive barriers would be subject to periodic testing and maintenance.

Fire extinguishers are provided in case of emergency although employees are not to attempt to fight fires. The fire extinguishers should be inspected, maintained, and tested as follows:

- Visually inspect the extinguishers monthly (or as close to monthly as possible without requiring an offshore trip) for the following:
    - cracking of the hose
    - corrosion
    - damage
- Perform an annual maintenance check of the extinguisher's condition;
- Record the date of the annual inspections for the life of the shell; and
- Hydrostatically test the extinguisher by trained persons every 6 years or sooner if a defect is discovered during the inspections or maintenance check.

9.4 *Hazard Communication*

DWSF does not store any hazardous chemicals. DWSF's contractors that use chemicals will maintain the Material Safety Data Sheet (MSDS) and make them available to DWSF's employees. No chemical should be delivered to DWSF without a MSDS and proper labelling on the container.

9.5 *Job Safety Analysis*

A Job Safety Analysis (JSA) should be conducted for each activity where a safety incident or harm to wildlife or the environment could occur. The job should be assessed to identify potential hazards and implement steps to minimize the risk.

9.6 *Lockout/Tagout*

Lockout/Tagout is designed to make sure the machine or equipment is stopped, isolated from potentially hazardous energy sources, and locked out before an employee begins work. These following procedural steps may be specified in a Lockout/Tagout procedure or the operating procedures and include the following:

- Equipment should be locked out to isolate hazardous energy unless it can be demonstrated that the use of a tagout system will provide full employee protection;
- Lockout devices and tagout devices should be the only devices used for controlling energy and standardized within the facility;
- Lockout and tagout devices should include provisions for the identification of the employee applying the device;
- Tagout devices should warn against hazardous conditions if the machine or equipment is energized and shall include a legend such as: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, or Do Not Operate;
- Lockout and tagout device application and removal should only be performed by the Authorized Employee who is performing the servicing or maintenance;
- Notification should be given to the affected employees by the Authorized Employee before the controls are applied and after they are removed from the machine or equipment;

- Following the application of lockout or tagout devices to energy isolating devices, potentially hazardous stored or residual energy should be relieved, disconnected, restrained, or otherwise rendered safe;
- Isolation and de-energizing should be verified by the Authorized Employee prior to starting work on the machine or equipment; and
- Nonessential items should be removed, employees positioned safely, and affected employees notified that the devices have been removed before lockout or tagout devices are removed and energy is restored to the machine or equipment. The removal of the Lockout/Tagout should be only performed by the Authorized Employee, their supervisor, or their respective relief.

9.7 *Material Handling*

DWSF occasionally operates the platform cranes and handles material. The crane is only operated by a trained crane operator in conjunction with a trained signal person. Employees are not allowed to touch the load while in transit and shall remain clear of the rotating crane.

Only slings in good working order should be used. Any slings that are not in good working order are to be removed from service.

9.8 *Permit to Work*

DWSF does not intend to conduct work that requires a permit. However, if such work does occur it should be managed through a permit to work process that covers the analysis, planning, authorizing, and execution of the work. Contractors executing the work that requires a permit to work shall have a permit to work system and shall follow that system.

9.9 *Personal Protective Equipment*

Based upon the DWSF hazard assessment, the following PPE should be used when on the platform:

- Hard hat
- Protective footwear with a steel or composite toe
- Gloves
- Eye protection
- Ear protection (when using powered hand tools or when the foghorn is sounding)
- Survival suit when water temperatures are below 50°F

Fall protection is provided when accessing the ladders on the platforms. Its use is optional when transferring from the boat to the first ladder but is required to be used for each of the higher ladders.

DWSF employees will follow the contactor's PPE requirements when working in the contractor's area of control and supervision (e.g., turbine, ferry.)

DWSF does not intend to have its employees work on live electrical components above 50 volts and thus does not provide the necessary PPE for electrical safety for higher voltage servicing and repair work. Contractors performing such work will provide the necessary PPE for their employees.

9.10 *Working at Height*

DWSF will limit working at height activities. When working at height is required, the work should be assessed and steps taken to minimize risks to workers. Workers should be competent in the use of fall protection equipment and a rescue plan should be in place prior to work commencing.

10 PERSONNEL COMPETENCY & TRAINING

Personnel should be trained and competent to do the tasks that are assigned to them.

Operating personnel should have the following minimum training with a current certificate from an approved course:

- Basic sea survival if working offshore
- Working at heights if falling from 20 feet or more is a risk

Individuals new to the operations should be provided with a HSE induction by the responsible manager on site. The induction may include but is not be limited to:

- Required PPE and how to use it;
- Incident reporting;
- Safe zones, restricted zones, and hazards; and
- Emergency escape route, sirens, and other actions.

Visitors to a site should be recorded. Visitors should be given an outline of their safety responsibilities and the site rules.

11 EMERGENCY RESPONSE AND CONTROL

DWSF will plan activities with control measures to mitigate against foreseeable emergencies. Should an emergency occur, it will be managed using the Emergency Response Procedure. Reference the Emergency Response Procedure in Appendix 1.

The wind turbines and substations have been deemed as unmanned facilities with only emergency welfare provisions in-place offshore. Normal and routine safety management will be accomplished as follows:

- Single Supervisory Control and Data Acquisition (SCADA) system will provide the operator with the capability to remotely monitor and control the plant (e.g., wind turbines and substations) including the ability to shut down facilities if necessary;
- Fire detection system will monitor the wind turbines and substations and alert the operator of detection/action through the SCADA system;
- Closed-circuit Television (CCTV) system (if required) will provide critical operational and security monitoring of the wind turbine and will be seen by the operator through the SCADA system; and

- Each wind turbine will be fitted with aviation lighting, aids to navigation and identification boards with status of operation monitored by the Operator through the SCADA system.
- Personnel escape routes will be clearly marked

12 INCIDENT INVESTIGATION

All incidents that could have resulted in serious injuries or economic damage above $1,000,000 or serious environmental damage should be investigated. The investigation should analyze the root cause of the incident and make recommendations that prevent recurrence.

13 HSE AWARENESS SCHEMES

All employees are responsible for familiarizing themselves with DWSF's HSE policies and procedures. All contractor and supplier personnel shall familiarize themselves with the applicable HSE policies and procedures. From time to time, the site manager may undertake a campaign of HSE awareness and promotion in support of this HSE document.

14 REPORTING AND RECORDKEEPING

14.1 *BOEM Reporting Requirements*

Bureau of Ocean Energy Management (BOEM) must receive an immediate verbal report and written notification within 15 days for the following incidents:

- Fatalities;
- Incidents that require the evacuation of person(s) from the facility to shore or to another offshore facility;
- Fires and explosions;
- Collisions that result in property or equipment damage greater than $25,000;

  > Collision means the act of a moving vessel (including an aircraft) striking another vessel, or striking a stationary vessel or object. Property or equipment damage means the cost of labor and material to restore all affected items to their condition before the damage, including, but not limited to, the OCS [Outer Continental Shelf] facility, a vessel, a helicopter, or the equipment. It does not include the cost of salvage, cleaning, dry docking, or demurrage.

- Incidents involving structural damage to an OCS facility that is severe enough so that activities on the facility cannot continue until repairs are made;
- Incidents involving crane or personnel/material handling activities if they result in a fatality, injury, structural damage, or significant environmental damage;
- Incidents that damage or disable safety systems or equipment (including firefighting systems);
- Other incidents resulting in property or equipment damage greater than $25,000; and
- Any other incidents involving significant environmental damage or harm.

A written report must be provided within 15 days for:

- Any injuries that result in the injured person not being able to return to work or to all of their normal duties the day after the injury occurred; and
- All incidents that require personnel on the facility to muster for evacuation for reasons other than weather or drills.

The verbal and written report must contain the following:

- Date and time of occurrence;
- Identification and contact information for each lessee, grant holder, or operator;
- Name and telephone number of the contractor and the contractor's representative, if a contractor is involved in the incident or injury;
- Lease number, OCS area, and block;
- Platform/facility name and number, or cable or pipeline segment number;
- Type of incident or injury;
- Activity at time of incident;
- Description of incident, damage, or injury (including days away from work, restricted work, or job transfer), and any corrective action taken; and
- Property or equipment damage estimate (in U.S. dollars).

14.2 *DWSF Reporting Requirements*

In addition to the required BOEM reporting, all Work-related incidents from Near Misses and above should be reported to the O&M Manager as soon as possible. Day Away From Work incidents shall be reported within 6 hours. Reporting should be done by e-mail with the following minimum information:

- Date and time of occurrence;
- Date of the report (if different from the email date);
- Name and phone number of the person writing the report;
- Incident location;
- Type of incident or injury;
- Activity at time of incident;
- Description of incident;
- Incident conditions (weather, etc.);
- Type of injuries or illnesses (with classification if known); and
- Corrective actions taken.

In case of an emergency, the reporting shall also be done in accordance with the Emergency Response Procedure.

The Occupational Safety and Health Administration (OSHA) severity categories and definitions should be used to keep reporting consistency across the Deepwater Wind assets. The categories are:

- Death
- Day Away From Work (DAFW)
- Restricted Work
- Job Transfer
- Medical Treatment (beyond First Aid)[1]
- First Aid[2]
- Near Miss

15 HSE ASSURANCE

The following assessment methods may be used by the Operations and Maintenance Manager to verify compliance with this HSE document:

- Site visits
- HSE audits
- HSE inspections
- Team talks
- Investigation of incidents (I would drop significant and just leave it as incidents- GH)

The O&M Manager should maintain the records of HSE performance and activities.

HSE performance should be part of the annual DWSF company review.

[1] There are several additional injury or illness situations that require recording. Always seek advice from the HSE department for help with case classification, reporting, and recording requirements.

[2] OSHA limits the First Aid case definition to only 14 specific types of injuries or illnesses.

Appendices

Appendix 1: Procedures

The following procedures are an integral part of this DWSF Safety Management System:

- Risk Management Procedure (DWW_CORP_PR_002)
- Management of Change (DWW_CORP_PR_004)
- Emergency Response Procedure (DWW_SFWF_OP_005)

RISK MANAGEMENT PROCEDURE

DEEPWATER WIND LLC

Document no: DWW_CORP_PR_002				
By	Revision	Date	Reviewed	Approved
D. Schwartz	(1) approved	Dec 2012	A. Kenney	C. van Beek
C. van Beek	(2) updated	Jul 03 2014	A. Kenney	D. Schwartz
L. Emmons	(3) updated	May 17 2018	R. Billington	C. van Beek

CONTENTS

1. INTRODUCTION

This document describes risk management within Deepwater Wind. Risk management is an important part of Deepwater Wind's management system as it contributes to a timely completion of the company's deliverables within budget and in accordance with specifications. In this document, responsibilities with respect to Risk Management have been defined and methods to execute Risk Management have been established.

2. RESPONSIBILITIES

It is the responsibility of the General Counsel to ensure that the risk management procedure is followed.

General Counsel:
- ensure each project or operation follows the Risk Management procedure
- overview of the risk management register for each project or operation
- update of this procedure as necessary

Project Director/Manager or Operations and Maintenance (O&M) Manager
- To execute risk management in accordance with this procedure

Deepwater Wind employees
- To execute the mitigation actions as defined in the Risk Register
- To update the mitigation status in the Risk Register

3. RISK MANAGEMENT PROCESS

The approach we have taken to manage risks is by following a methodical process by which the team identifies, scores, and ranks the various risks. Ranking (before mitigation) will make use of the following Risk Ranking matrix:

		Impact			
		small	restricted	significant	high
Probability	likely	**III**	II	**I**	**I**
	possible		**III**	II	**I**
	unlikely			**III**	II
	highly unlikely				**III**
		<$1MM	>$1MM and <$4MM	>$4MM and <$10MM	>$10MM
		Consequence			

For risk categories I and II, mitigation actions will be developed. Specific persons, responsible for each mitigation action, will be listed in the Risk Register. The Risk Register will be updated periodically with possible new risks and with the latest status of the mitigation actions.

Risk category III will be monitored, including considering the necessity to change the ranking.

Risks ranked in the green zone will be listed without a mandatory requirement for follow-up.

4. RISK REGISTER

Every project or operation must maintain a Risk Register to track risks and associated mitigation strategies. The Risk Register is a log of all identified risks, their probability and impact to the project or operation, mitigation actions, people responsible for the mitigation actions, and mitigation action status. The Risk Register will be updated on a regular basis. The Risk Register shall be filed in the project or operation file system and copied to the General Counsel.

An example of an extract of a Risk Register has been included in Attachment 1.

ATTACHMENT 1: EXAMPLE RISK REGISTER

Risk			RISK RATING			Mitigation			MITIGATED RISK RATING			
Phase	Number	ID	Probability	Consequence	Rating	Mitigation Code	Actions/Comments	Responsible Party	Probability	Consequence	Rating	Rating after Financial Closure
		DESIGN (Technical Risk)										
D	1	Jacket weight increases above pro-forma	Possible	Significant	II	RR	Industry lessons learned / selection of design consultant	RJB	Unlikely	Significant	III	III
D	2	System voltage instability due to ferroresonance (iron core) reactors	Possible	Significant	II	RR	Reduce by four eyes review of electrical modelling	DPO	Unlikely	Significant	III	III
D	3	CVA and/or LDA action (schedule / cost impact)	Possible	Restricted	III	MM	Manage thru contractor selection and interaction	DPO	Possible	Small		
D	4	Contractor analysis results in a fatigue prone jacket	Possible	Significant	II	RR	Reduce by 3rd Party verification of structural model / CVA	DPO	Unlikely	Significant	III	III
D	5	Integration of European and U.S. design standards	Possible	Significant	II	MM	Manage design interface w/register - agreed standards (CRMC)	DPO	Possible	Small		
		TURBINE PURCHASE										
TP	1	WTG delayed delivery impacts construction schedule	Possible	High	I	MM	Manage thru expediting / de-link resource dependacies / business interruption insurance	RJB	Unlikely	Restricted		
		GENERAL										
G	1	Late permits	Possible	High	I	MM	Contingency plan for late (or) slipped permits	RJB	Possible	Restricted	III	
G	2	Contractual interfaces	Possible	High	I	MM	Create interface management procedures for: (1) Contractual; (2) Organizational; and (3) Physical interface	RJB	possible	Restricted	III	
G	3	Weather delay	Possible	Significant	II	RR/CC	Reduce consequence through weather forecast planning/transfer to contractor / workability study	RJB	Possible	Restricted	III	
G	4	Delayed financial close	Unlikely	High	II	-R	DH for preventing delay/ RJB for building in float in project to allow for this	DH/RJB	Unlikely	Restricted		
G	5	Change orders generally	Likely	Restricted	II	MM	Manage thru Change Control planning / Scope Definition	RJB	Unlikely	Restricted		
G	6	Cable, jacket, turbine interfaces (physical interfaces)	Possible	Significant	II	RR	Constructability design review / Dimension Control	RJB	Possible	Small		
G	7	Post-construction audit by PUC	Likely	Restricted	II	MM	project controls suitable for PUC audit / CVA	RJB	Unlikely	Restricted		
G	8	Drawdown issues w/lenders	Possible	Significant	II	MM	Project Control Planning to define cash call points	RJB	Unlikely	Restricted		
G	9	Loss of key personnel	Possible	Significant	II	-R	Set up staffing plan with "backup" coverage of positions and recruitment strategy	RJB	Unlikely	Restricted		
G	10	Serious safety accident	Unlikely	Significant	III	MM	Pro-emptive and contingency based HSE plan / Safety Culture	RJB	Highly Unlikely	Significant		
G	11	Non-compliance (envir.) during construction	Unlikely	Significant	III	MM	Pro-emptive and contingency based HSE plan / Safety Culture	RJB	Highly Unlikely	Significant		
G	12	No staging area available	Unlikely	Significant	III	RA	Early agreements on Staging Areas	RJB	Unlikely	Small		
G	13	Transportation loss-jacket/turbine	Highly Unlikely	High	III	IT	Insure against loss / partial business interruption	RJB	Highly Unlikely	Significant		
G	14	Onerous permit conditions	Possible	Restricted	III	-R	Secure permits prior to Financial Close / mgmt reserves / manage schedule / DWW control of decision points	AK/RJB	Possible	Small		
G	15	Delay in beach construction past Memorial Day [May 15?]	Possible	Restricted	III	-R	Include float in beach pull activities / contingency plan	RJB	Unlikely	Restricted		
G	16	Allision / Collision	Unlikely	Significant	III	IT	Vessel insurance / business interruption insurance	RJB	Unlikely	Small		
G	17	Supplier bankruptcy	Highly Unlikely	High	III	IT	Performance Bonding / business interruption insurance / credit checks	RJB	Highly Unlikely	Restricted		
G	18	Labor unrest/strawil.	Highly Unlikely	Small		MM	Maintain relationships / favorable labor market conditions	RJB	Highly Unlikely	Small		
G	19	Contract disputes (cost/sch)	Unlikely	Restricted		MM	Black Swan event managed by DWW	RJB	Unlikely	Restricted		
		TURBINE ERECTION										
TE	1	Availability of turbine vessel	Unlikely	High	II	RR	Secure provisional vessel commitment by financial close / and/or Siemens supply vessel	RJB	Unlikely	Restricted		
TE	2	Lifting risk	Unlikely	Significant	III	RR	Design lifts / ensure foundation, towers, turbine conform	RJB	Unlikely	Restricted		
TE	3	Serial turbine blades defects	Highly Unlikely	High	III	IT	Warranty		Highly Unlikely	High	III	III
		FOUNDATIONS										
F	1	Late jackets because of change orders	Unlikely	High	II	RR	Schedule Float / Early jacket construction	RJB	Unlikely	High	II	
F	2	Steel prices rise	Possible	Significant	II	-R	Probablistic cost and schedule risk analysis at financial close / Monitor market for order placement	RJB	Possible	Small		
F	3	Unable to level foundations to TSA specifications	Unlikely	High	II	RR	Reduce in design by separate jacket and deck	RJB	Highly Unlikely	High	III	III
F	4	Difficulties in piling	Unlikely	Significant	III	MM	Reduce by borings and installation equipment selection	RJB	Unlikely	Significant	III	III
F	5	Jacket design problems because of bad Siemens data	Possible	Restricted	III	RR	CVA	RJB	Unlikely	Restricted		
		INTER-ARRAY CABLE										
I	1	Achieving permitted burial depth	Unlikely	Significant	III	CC	(1) Make-right requirements in contract; (2) Owner's engineer review of design and installation (3) Wide ROW w/provisions to re-route when plow hits obstructions	RJB	Unlikely	Restricted		
I	2	Cable damage during install	Unlikely	Significant	III	-R	Engineer the process /agreement with installtion contractor / splice kit in spares	RJB	Unlikely	Restricted		
I	3	Equipment availability (vessel, plow, etc.)	Unlikely	High	II	CC	LDs in Vendor contract; actively review schedule and equipment list, business interruption insurance		Highly Unlikely	Significant		
		TESTING/COMMISSIONING										
TC	1	Delay energizing BITS	Possible	High	I	IT	Business Interruption Insurance / contingency with temporary generators	PJM	Possible	Restricted	III	III

MANAGEMENT OF CHANGE PROCEDURE

DEEPWATER WIND LLC

Document no: DWW_CORP_PR_004				
By	Revision	Date	Reviewed	Approved
C. van Beek	(1) approved	Jun 2012	P. Murphy	D.Schwartz
C. van Beek	(2) approved	Jun 24 2014	P. Murphy	B.Billington
L. Emmons	(3) revision to reflect operations	May 13, 2018	R. Billington	C. van Beek

Contents

1. INTRODUCTION

This document describes the Management of Change (MoC) process within Deepwater Wind. MoC is an important part of Deepwater Wind's management system as it safeguards project goals, quality, and HSE standards in case of deviation from an agreed plan. In this document, responsibilities with respect to MoC have been defined and methods to execute MoC have been established.

2. RESPONSIBILITIES

It is the responsibility of the Project Manager to ensure that for each project the MoC procedure is followed. Likewise, it is the responsibility of the Operations and Maintenance (O&M) Manager to ensure that for their operation the MoC procedure is followed.

President:

- To keep this procedure up-to-date

Project Manager/Director or O&M Manager:

- Ensure each project/operation follows the MoC procedure
- Approve changes in accordance with the MoC procedure

Site Representative:

- To follow the MoC procedure in case of deviations from the agreed plans
- Approve changes in accordance with the MoC procedure

3. MANAGEMENT OF CHANGE POLICY

A well-managed project or operation requires that a formal MoC process be used throughout the various stages to manage and control changes in the scope, execution plan, and other important components. The objective of this section is to describe this process and explain how it is best applied.

The Company's bias, once key documents are approved, is to rigorously manage for NO Changes.

Despite best efforts, proposals to make changes are likely to occur and require consistent treatment. Changes can arise due to many circumstances: external events; omissions in defining the scope; price or delivery changes; equipment changes; procedure changes; or intentional changes, such as to improve quality or to respond to or reduce an identified risk.

The project definition, basis of design, execution plans, budget, and schedule are the primary baselines from which changes can be controlled. For operations, it is the as-built structure and equipment along with the initial set of procedures. Strict control of change and a bias for NO Change assures that the safety and economic validity is maintained throughout its execution and delivers a project or operation that meets the defined objectives. In addition, it underpins the key

principle of standardization. The bias for NO Change is introduced progressively as documents are approved or “frozen”.

The principles of the MoC system are:

- All changes to approved documents will be subject to a MoC process.
- The process will define authority levels, including financial limits, for approval of change.
- The process will be implemented with appropriate levels of control and review applied to differing levels/categories of change.
- The overall system for MoC will be managed by the Project Manager/Director or O&M Manager.

Interfaces with Contractor systems

When a contractor proposed change is offered for Company approval, in the form of a Design Change Note or Concession Request or Site Query, it should trigger the registration of the change in the Company MoC system. A key element of the process is to evaluate the safety impact and route the proposed change to the appropriate personnel for evaluation.

Items typically subject to the MoC process include, but are not limited to:

- Key documents that have been approved for design or construction such as Basis of Design, Process and Instrumentation Diagrams (P&IDs), layouts, electrical hazardous area drawings, electrical one-lines, Cause and Effect drawings, and Regulatory drawings that have been submitted for approval. Changes that could impact the findings or results of hazard management studies such as Hazardous Operations (HAZOPS), Hazards Identification (HAZIDS), Fire and Explosion studies, Egress and Evacuation studies, and others. Such a change would require a review because, even though it may not appear on a frozen key document, it still could impact these studies or the resulting recommendations. For operations, any change that can impact the assumptions made in the project studies must be reviewed.
- Proposed changes to specifications or to key personnel or organizational structure.

Changes to detailed construction plans such as piping and wiring routing drawings may be approved by the Site Representatives, providing they have no safety or significant cost or schedule implications, but the interfaces with such systems should be defined and agreed upon with the Project Manager/Director. All operational changes must be approved by the O&M Manager.

4. MANAGEMENT OF CHANGE PROCESS

The MoC process involves identification, screening, documentation, review, approval, and implementation, as shown in Figure 1.

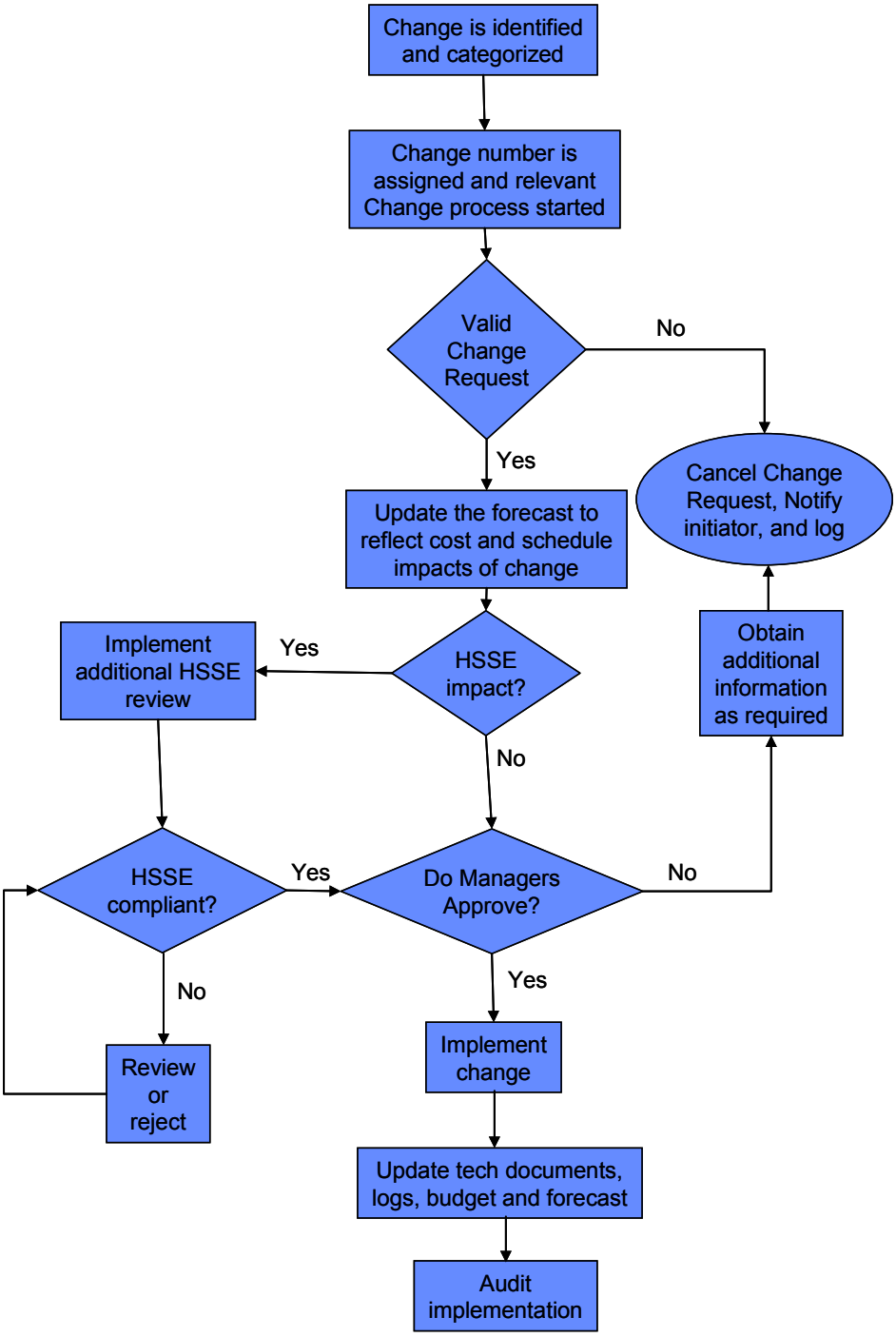


Figure 2 - Processing a change

Categories of Changes:

Scope changes
Scope Changes fundamentally impact the project boundaries, as described in source documents such as the Basis of Design. Major changes such as these require approval by the Project Manager/Director, and possibly at the Project Board level.

Changes within scope
These changes do not alter the fundamental concept but may affect approved designs or intermediate milestone dates or have safety implications within the current project scope. The processing of such changes depends on their nature and they can be classified in one of the following ways:

Modifications
- Those changes that alter existing designs or the as-built structure and may impact safety or operability and probably will affect cost forecasts and schedules.
- These require a robust evaluation process prior to being submitted for approval by the appropriate authority.

Changes to execution plans and operating procedures
- During construction and operations, circumstances can require changes to the work plans. Normally these changes do not impact the Project Definition and do not alter existing designs or as-built structures but may impact safety, cost forecasts, and schedules.
- These changes must be documented and require approval by the Site Manager for projects and the O&M Manager for operations. In case applicable HAZIDS are affected, a specific HAZID has to be conducted to ensure compliance with the Health and Safety standards.

For each of the above changes the steps should be followed in accordance with the flow diagram of Figure 2.

5. REQUIREMENTS AND GOOD PRACTICES

The following requirements and good practices apply throughout the project or operation.

- Communicate the roles and responsibilities regarding management of change to the team and ensure these roles and responsibilities are understood.
- Ensure team members fully understand the categories of change.
- Agree upon the extent to which the system will be implemented by contractors or how contractors' systems will be integrated with the MoC process.
- Ensure the MoC system captures and tracks changes to performance targets.
- **Seek to eliminate all but essential changes once baselines have been established and adopt a 'management of no change' mind set once documents have been approved.**
  - Historically, the full impact of change is significantly underestimated.
- **Reflect all pending and approved changes in the forecast and schedule.**
  - Synchronize the Management of Change system with the other control systems in place, particularly those dealing with Cost, Schedule, and Risk Management.
- **During Commissioning, the engineering team must interface with the Commissioning & Start-Up and Operations teams in order to:**
  - Report change status.
  - Supply the supporting documentation to verify that changes have been implemented as approved and are fully closed out.
  - Code outstanding changes to process systems so these align with Commissioning.
- **Participate in contractors' change process.**
  - Challenge the contractor to develop the optimum solution of the change.
  - Audit the engineering contractor's change management system and its interface with the Company management of change system so that all changes are processed appropriately.

SOUTH FORK WIND FARM

South Fork Wind Farm

Emergency Response Procedure

Operations and Maintenance

DEEPWATER WIND SOUTH FORK, LLC

Document no: DWW_SFWF_OP_005				
By	Revision	Date	Reviewed	Approved
P Murphy	0: Draft	May 12, 2017	L Emmons	C van Beek
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P Murphy	2: Approved	July 9, 2017	L Emmons	C van Beek
L Emmons	3: Revision for review	December 23, 2017	B Billington	C van Beek
L Emmons	4: Approved	May 13, 2018	B Billington	C van Beek

Table of Contents

Appendices

1 Emergency Response Expectations

This document describes the measures used by Deepwater Wind South Fork, LLC (DWSF) to bring an emergency situation under control and instigate the initial recovery.

Responsibilities and procedures should be clearly defined and training conducted to verify in the event of an emergency:

- All personnel are mustered in a safe location away from the incident.
- The emergency response team evaluates the extent of the incident, takes care that any casualty receives the appropriate treatment, takes measures as may be appropriate to control the emergency, informs the appropriate emergency forces and logs the events and actions in an emergency report.
- Personnel are evacuated in a safe and orderly manner should the decision be made to abandon a unit or location.

1.1 Emergency Response Philosophy

DWSF will carry out all of its business activities with a primary focus that the health, safety and well-being of its employees, contractors and third parties effected by its activities is paramount. DWSF will plan activities and in doing so incorporate controlling measures to mitigate against foreseeable emergencies.

1.2 Bridging Documents

Integral to this planning will be the selection of competent employees and contractors, along with the establishment of clear communication lines and individual responsibilities. Each main contractor shall have fit-for purpose emergency response procedures for its own operations.

An emergency response bridging document should be developed that ties the emergency response procedures of the main contractors and DWSF together. This bridging document and applicable procedures shall be communicated and practiced.

2 Command and Communication

The overall Deepwater Wind Emergency Response Team (DWWERT) organization diagram for both onshore and offshore is shown in Figure 1.

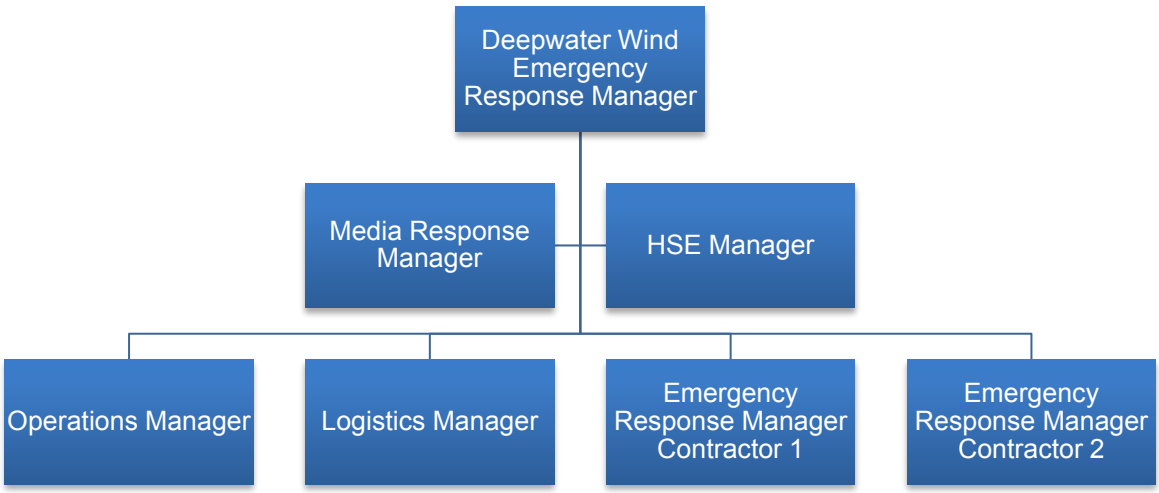

Figure 1

- Primary DWW Emergency Response Manager:
  - Paul Murphy – (412) 901-6587
- Alternate 1 Emergency Response Manager:
  - John O'Keeffe: (857) 268-0716

3 Training for Emergencies

3.1 Emergency Response Training

All personnel are to have the emergency response procedures explained to them during the induction before starting working.

Personnel who could be involved in emergency response duties should be competent in the roles and responsibilities they are to undertake. Individual training needs for response team members should be identified and implemented which may include:

- Communication equipment use.
- Ladder rescue.
- Self-rescue techniques.
- Confined space awareness training.
- Confined space rescue techniques.
- Authorized gas tester for gas tester operator.

Mariners on vessels should have the STCW95 training.

3.2 Exercises

A full emergency response exercise should be conducted whenever commencing operations within a new environment, significant personnel changes have occurred, or new hazards have been introduced to normal operations. Wherever possible, this should include real time interaction between DWWERM, contractors' onshore/offshore units and the emergency services, especially those involved in search and rescue.

Regular emergency drills should be carried out and a record of the training drills conducted kept. The drills should pertain to the type of work being performed at the site and should include (if relevant):

- Confined space rescue
- Ladder rescue
- Casualty handling
- Oil spill response
- Damage control
- Fire fighting
- First aid

3.3 Lessons Learned

After any planned or unplanned actions requiring the use of the emergency procedures, all forms and records should be collected and kept. An evaluation should be made to establish what processes have been effective and what needs to be improved. Any actions arising should be recorded and their implementation monitored.

4 Emergency Procedures

The most likely incident scenarios and the associated response activities are summarized below. Most incidents will need to be reported to the Bureau of Ocean Energy Management (BOEM). Additional details for reporting methods and requirements can be found in Appendices 1 – 4.

4.1 Vessel Collision:

- In the event of a vessel collision the United States Coast Guard Rescue Coordination Center (USCG RCC) should be contacted using one of the methods described in Appendix 1.
- A check should be made to verify all personnel are accounted for.
- The condition of the vessel involved in the collision should be ascertained and, if required, able assistance given.
- The vessels emergency procedures should be followed.
- If the collision is with the platform, then all personnel should evacuate the platform pending a structural review of the foundation.

4.2 Man Overboard:

- In the event of a man overboard (MOB) situation, the vessels MOB procedure should be followed including launching either a smoke marker buoy or life ring with light. The crew transport vessel procedure should be used if it is a fall from the platform. A PAN/PAN alert should be given on channel 16 VHF. Appropriate recovery and rescue equipment should be made ready.
- The casualty should be recovered and first aid administered if required. The casualty should be kept warm and returned to shore where medical assistance and examination can be sourced.
- In the event the casualty cannot immediately be located, the USCG RCC and DWWERT should be alerted. Assistance in the search should be requested from other vessels in the area.

4.3 Fire:

- The platform should be evacuated unless it is determined it is safe to remain. There should be no attempt to fight the fire.
- For vessel fires, the safety officer shall be informed immediately as per the emergency procedures of the vessel. Attempts can be made to extinguish the fire providing it is safe to do so and only to the person's level of training in firefighting. Following a fire, no confined spaces should be entered unless it can be ascertained that the atmosphere is clean and presents no risk to personnel. The possibility of noxious and or toxic fumes should be considered from the resulting fire.
- The vessels emergency procedures should be followed that normally involve the following measures:
- If the fire cannot be extinguished using the portable firefighting equipment, the crew should relocate to a safe place, or if that is not possible, the crew shall be evacuated immediately and the USCG RCC contacted.
- A check should be made to verify all personnel are accounted for.
- The vessel emergency response manager shall inform the corporate emergency response manager and the DWWERT. Further actions should be in line with the emergency response bridging document.

4.4 Bomb Threat

- In the event of a bomb threat, the details of the threat should be recorded. The facility should be evacuated, and company procedures should be followed for reporting to senior management.
- The vessel should return to port. During this time, a search of the vessel should be made to ascertain the validity of the threat. Under no circumstances are any unidentified objects to be disturbed.
- In all cases, the local authorities either police, port security officials, and/or the USCG must be informed of the threat.
- The vessel emergency response manager shall inform the corporate emergency response manager and the DWWERT. Further actions should be in line with the emergency response bridging document.

4.5 Chemical/Oil Spill

- The vessel is to have sufficient chemical/oil spill response equipment to handle a spill of the magnitude dictated by the amount of oil/fuel/chemical that is being carried.
- The vessel chemical/oil spill response procedure should be followed.
- Personnel on the site or vessel should be aware of the equipment, its location and how to use/deploy the equipment. Checks of the equipment should be made on a regular basis to verify its integrity.
- In the event of a chemical/oil spill, every effort should be made by the personnel on the site or vessel to limit the extent of the leak and limit the effects on the environment. Personnel on the site or vessel are expected to assist in the cleanup of any oil that spills to the level of their training.
- The vessel emergency response manager shall inform the corporate emergency response manager and the DWWERT. Further actions should be in line with the emergency response bridging document.

Reference: *The Environmental Protection Agency (EPA) has established requirements to report spills to navigable waters or adjoining shorelines. EPA has determined that discharges of oil in quantities that may be harmful to public health or the environment include those that:*

Violate applicable water quality standards;

Cause a film or "sheen" upon, or discoloration of the surface of the water or adjoining shorelines; or

Cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Require that any chemical that is spilled, onshore or offshore, that meets the reporting quantity (RQ) must be reported.

Further guidance is provided in Appendix 2.

4.6 Adverse Weather

Adverse weather (high wind, precipitation, fog, temperature) pose significant risk to both onshore and offshore works; however, the effects are more pronounced in the offshore environment.

Before any offshore works commence, weather forecasts should be consulted and a sufficient weather window established including a safety time margin to allow the proposed works to be completed and the support craft reaching the safety of sheltered waters.

Weather conditions can have more profound effect on certain activities such as lifting operations, transferring of personnel, and working at height. The weather conditions should form part of the task based risk assessment before works begin.

- In the event of unexpected weather deterioration during operation and maintenance activities the works should be suspended in good enough time to allow personnel to relocate to a safe location.
- Consideration should be given to the possibility of having supplies on the offshore location for use in the event of a rapid deterioration in the weather or the support vessel having mechanical problems which prevented the crew being taken off the offshore location. These supplies should include but not be limited to food stuffs, drinks, water, warm clothing, and spare radio batteries. These items could be brought with the crew and this possibility should be discussed during task risk assessment and tool box talk.

4.7 Serious Injury/Fatality

In the case of a serious injury/fatality occurring, the following procedures should be undertaken:

- The USCG RCC is to be informed as soon as possible if the incident occurs over water by the owner/operator of the vessel.
- The Occupational Safety and Health Administration (OSHA) must be notified in the event of any fatality (within 8 hours) or serious injury that requires hospitalization, amputation, or the loss of an eye within 24 hours by the operator responsible for the site if the incident occurs within 3 miles of shore.
- First aid personnel are to remain with the injured person until the emergency services arrive.
- The police are to be informed.
- The area where the incident occurred is to be isolated and to be kept as near as possible the same as when the incident occurred. If anything is to be moved, then take photographs of the original condition. Notwithstanding the above, nothing should be removed from the site of a serious injury or fatality unless the safety of personal or the installation is compromised by failing to do so.
- Only move the injured at-risk person if there is a real risk to his (and others attending him) safety.
- Report the incident to vessel emergency response manager who shall then inform the corporate emergency response manager and the DWWERT as soon as reasonably possible. Take witness statements while it is fresh in their minds. Further actions should be in line with the emergency response bridging document.

4.8 DWSF Facility Evacuation

In case of emergency, all personnel should immediate evacuate the DWSF facility. Personnel on the platform foundation should enter the crew transfer vessel and escape using the vessel procedures. Personnel in the control room or office should follow the posted escape route instructions which is usually through the closest door. A fire alarm should sound in case of a fire. Do not use elevators during a fire. DWSF employees are not expected to fight fires or to preform rescue operations and are not trained to do so. The DWWERT should account for all employees to verify the evacuation was successful.

Appendix 1 - Methods for Reporting Emergencies

U.S. Coast Guard Rescue Coordination Center

By Telephone	Look in the front of your telephone directory for an emergency number listing for the U. S. Coast Guard or Dial 911 or Call the nearest U.S. Coast Guard Rescue Coordination Center: RCC Norfolk +17573986231
By VHF-FM Radio VHF-FM radios are the preferred method for reporting emergencies from vessels on the water.	Call U.S. Coast Guard on **Channel 16 VHF-FM** (156.8 MHz) Emergency Radio Call Procedures: 1. Make sure radio is on 2. Select channel 16 3. Press/hold the transmit button 4. Clearly say: "MAYDAY MAYDAY MAYDAY" 5. Also give: - Vessel name and/or description - Position and/or location - Nature of emergency - Number of people on board 6. Release transmit button 7. Wait for 10 seconds - if NO response repeat call.
By Cellular Phone Cellular phones are an acceptable secondary means of calling the Coast Guard.	Look in the front of your telephone directory for an emergency number listing for the U. S. Coast Guard or Dial 911 or Call the nearest U. S. Coast Guard Rescue Coordination Center listed above.
By Email	**Do NOT send it via email**, contact the Coast Guard via telephone or radio.
By Other Methods	The Global Maritime Distress and Safety System (GMDSS) provides a number of additional means for contacting or alerting USCG department of SAR authorities. These include INMARSAT, SARSAT (EPIRBs, ELTs, and PLBs), MF-DSC, HF-DSC, etc. In addition, for vessels or persons in distress there are nationally and internationally accepted/prescribed visual and sound distress signals (flares, horns, mirrors, flashing lights, flags, etc).

OSHA

OSHA By Telephone	**Regional Office** Federal Building 201 Varick Street, Room 670 New York, New York 10014 (212) 337-2378 (212) 337-2371 FAX **24-hour hotline** 1-800-321-6742

National Response Center (NRC)

NRC By Telephone	1-800-424-8802 or (202) 267-2675

DWWERT

DWSF / DWWERT By Telephone	Primary DWW Emergency Response Manager: Paul Murphy – (412) 901-6587 Alternate 1 Emergency Response Manager: John O'Keefe – (857) 268-0716
By Email	pmurphy@dwwind.com jokeeffe@dwwind.com with a copy to swaker@dwwind.com

Appendix 2 - Oil Spill Reporting Requirements

Section 103 of CERCLA requires the person in charge of a facility or vessel, as soon as he or she has knowledge of a release of a hazardous substance in an amount equal to or greater than a Reportable Quantity (RQ), to report the release immediately to the National Response Center (NRC). The NRC number is 1-800-424-8802, or (202) 267-2675.

EPA has established requirements to report spills to navigable waters or adjoining shorelines. EPA has determined that discharges of oil in quantities that may be harmful to public health or the environment include those that:

- Violate applicable water quality standards;
- Cause a film or "sheen" upon, or discoloration of the surface of the water or adjoining shorelines; or
- Cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Appendix 3 - Reporting Requirements to BOEM

BOEM must receive an immediate verbal report and written notification within 15 days for the following incidents:

- Fatalities;
- Incidents that require the evacuation of person(s) from the facility to shore or to another offshore facility;
- Fires and explosions;
- Collisions that result in property or equipment damage greater than $25,000;

(Collision means the act of a moving vessel (including an aircraft) striking another vessel, or striking a stationary vessel or object. Property or equipment damage means the cost of labor and material to restore all affected items to their condition before the damage, including, but not limited to, the OCS [Outer Continental Shelf] facility, a vessel, a helicopter, or the equipment. It does not include the cost of salvage, cleaning, dry docking, or demurrage)

- Incidents involving structural damage to a DWSF facility that is severe enough so that activities on the facility cannot continue until repairs are made;
- Incidents involving crane or personnel/material handling activities, if they result in a fatality, injury, structural damage, or significant environmental damage;
- Incidents that damage or disable safety systems or equipment (including firefighting systems);
- Other incidents resulting in property or equipment damage greater than $25,000; and
- Any other incidents involving significant environmental damage or harm.

A written report must be provided within 15 days for:

- Any injuries that result in the injured person not being able to return to work or to all of their normal duties the day after the injury occurred; and
- All incidents that require personnel on the facility to muster for evacuation for reasons other than weather or drills.

The verbal and written report must contain the following:

- Date and time of occurrence;
- Identification and contact information for each lessee, grant holder, or operator;
- Name and telephone number of the contractor and the contractor's representative, if a contractor is involved in the incident or injury;
- Lease number, OCS area, and block;
- Platform/facility name and number, or cable or pipeline segment number;
- Type of incident or injury;
- Activity at time of incident;
- Description of incident, damage, or injury (including days away from work, restricted work, or job transfer), and any corrective action taken; and
- Property or equipment damage estimate (in U.S. dollars).

Appendix 4 - Reporting Requirements to DWSF

Notify the DWWERT as soon as possible whenever the BOEM or any other agency requires notification. In addition to the required regulatory reporting, all work-related incidents from near misses and above should be reported as specified in the DWSF Safety Management System.

Verbal notification shall be followed up by a written e-mail within 48 hours after the incident providing the same information reported to BOEM. The e-mail shall be sent to: pmurphy@dwwind.com and jokeeffe@dwwind.com with a copy to swaker@dwwind.com.