

June 22, 2018

Ms. Barcy F. McNeal, Secretary  
Ohio Power Siting Board  
Docketing Division  
180 East Broad Street, 11<sup>th</sup> Floor  
Columbus, OH 43215

**Re: Case No. 16-1871-EL-BGN, In the Matter of the Application of Icebreaker Windpower, Inc. for a Certificate to Construct a Wind-Powered Electric Generation Facility in Cuyahoga County, Ohio.**

**Public Disclosure of Application Exhibits S and P**

Dear Ms. McNeal:

On February 1, 2017, as supplemented, Icebreaker Windpower, Inc. (“Applicant”) filed an application with the Ohio Power Siting Board (“OPSB”) for a certificate of public convenience and necessity (“Application”) to construct a 6-turbine demonstration wind-powered electric generation facility on Lake Erie, off the shore of Cleveland, in Cuyahoga County, Ohio. Concurrent with the filing of its Application, the Applicant filed a Motion for Protective Order seeking to maintain several portions of the Application confidential and not part of the public record. Included in its Motion for Protective Order was a request to maintain and keep under seal Application Exhibits S (Vestas V126 Wind Turbine Safety Manual) and P (Fred. Olsen Ocean HSE Manual).

On May 23, 2018, the OPSB Administrative Law Judge (“ALJ”) issued an Entry in this case, which, among other things, referenced the Applicant’s Motion for Protective Order. As part of this Entry, the ALJ requested that the Applicant:

1. File an amended Motion for Protective Order to specifically identify the information on each page of Exhibits S and P that the Applicant believes should be considered confidential and provide a specific explanation as to why such information should be deemed “trade secrets.”
2. Provide an affidavit with the amended Motion for Protective Order.
3. Identify or label which documents filed under seal pertain to which exhibit.

With regard to the first item requested by the ALJ, the Applicant has reviewed Exhibits S and P and, after consultation with the entities that authored the documents, has determined that Exhibits S and

Ms. Barcy F. McNeal  
Icebreaker Windpower, Inc.  
June 22, 2018  
Page 2

P can be made part of the public record in this case. Therefore, attached to this letter are unredacted copies of each Exhibit.

With regard to the second item, due to a family emergency, the officer that will be signing the affidavit was not able to do so at this time. Therefore, the Applicant will be finalizing the affidavit and will file it as soon as possible.

Finally, in response to the third item requested by the ALJ, it appears that the labeling of the exhibits contained in the confidential documents submitted on February 1, 2017, had somehow been removed after the filing was made. Therefore, the Applicant provided the OPSB with another digital copy of the information, which contains the labeled documents.

We are available, at your convenience, to answer any questions you may have.

Respectfully submitted,

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***Attorneys for Icebreaker Windpower, Inc.***

Enclosure

COLUMBUS 63172-1 92160v2

Ms. Barcy F. McNeal  
Icebreaker Windpower, Inc.  
June 22, 2018  
Page 3

### CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this letter on the parties referenced in the service list of the docket card who have electronically subscribed to this case. In addition, the undersigned certifies that a copy of the foregoing document is also being served upon the person below via electronic mail this 22<sup>th</sup> day of June, 2018.

/s/ William V. Vorys  
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COLUMBUS 63172-1 92160v2

Icebreaker Windpower, Inc.  
Case No. 16-1871-EL-BGN  
Public Disclosure of Application Exhibits S and P  
June 22, 2018

## **Exhibit S**

### **Vestas V126 Wind Turbine Safety Manual**

# MAN HSE Management System Handbook

**MHI Vestas Offshore Wind**

## Table of Contents

Abbreviations and terms .....	3
Introduction.....	4
Scope .....	4
Document hierarchy .....	4
Policy Statement .....	5
Planning .....	6
Local, Legal and Other Requirements .....	6
Roles and Responsibilities .....	7
CEO .....	7
Directors and Managers .....	7
Head of HSE .....	7
Supervisors .....	7
Employees .....	7
HSE Co-Ordinators .....	8
Employee Safety Representatives .....	8
Contractors and Third Parties .....	8
Training requirements .....	8
Consultation and Communication .....	9
Consultation .....	9
Communication .....	9
Document control .....	10
Records and Records Management .....	10
Operational Control.....	11
Driving Safely at Work .....	11
Control of Hazardous Energy – Electrical & Mechanical Safety .....	11
Stop Work .....	12
Alcohol and Drug Policy .....	12
Work Equipment .....	12
Working at Height .....	13
Manual Handling .....	13
Chemical Management .....	13
Personal Protective Equipment (PPE) .....	14
Work Instruction .....	14

Approved

PAT (Portable Appliance Testing) .....	14
Office ergonomics .....	14
Isolated Working .....	15
Lifting Operations .....	15
Permit to work.....	15
Visitors.....	16
Access and Egress .....	16
Confined Spaces .....	16
Environmental Management .....	17
Security.....	17
Emergency Preparedness and Response .....	17
Setting and tracking of HSE Objectives and Targets .....	18
Objectives.....	18
Performance Measurement and Monitoring.....	19
Monitoring of Objectives .....	19
Incident Management.....	19
Incident Reporting.....	19
Investigation .....	19
Audits.....	20
Management Review .....	20
Safety Violations / Discipline .....	20

## Abbreviations and terms

ISO 14001	ISO 14001 is a set of standards related to environmental management. These standards help organisations to minimise operations that negatively affect the environment (i.e., cause adverse changes to air, water or land) by complying with applicable laws, regulations, and other environmentally oriented requirements.
LOTO	Lockout-Tag out. Lockout-Tag out is a safety procedure involving the use of a sequence of physical locks and warning tags to ensure that an electrical or mechanical device cannot be accessed or energised. LOTO is used in industry and research settings to ensure that dangerous machines are properly shut off and not started up again prior to the completion of the maintenance or service work
MVOW	MHI Vestas Offshore Wind
OH&S	Occupational health and safety

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OHSAS 18001

OHSAS 18001 is a British standard for occupational health and safety management systems. OHSAS helps all kinds of organisations put in place demonstrably sound occupational Safety Data Sheet

SDS

Wind turbine ERP

Emergency Response Plan that addresses a specific wind turbine type.

## Introduction

### Scope

This document and its' requirements apply to all MVOW activities. All employees performing a task on the behalf of MVOW shall be familiar with the content of the HSEMS Handbook and are expected to work according to the procedures, instructions, policies and manuals.

The documents in the Management System aim to capture the HSE Aspects of the business and enable proactive work to prevent incident to persons, nature or property.

MVOW strongly believes that building a strong safety culture starts with making it easy to do the work safe and encourage reporting of any risks. The strategy to achieve this is to provide the organisation with accessible, understandable descriptions of how to perform the work in a safe manner. The written procedures are accompanied by Toolbox Talks, trainings a workshops.

### Document hierarchy

The MVOW Management System consist of a suit of documents with the QHSE Policy and Manuals as overall guiding documents and with procedures, instructions and templates as supporting documents.

The documents in the management system are controlled according to the procedure described under document and record control.

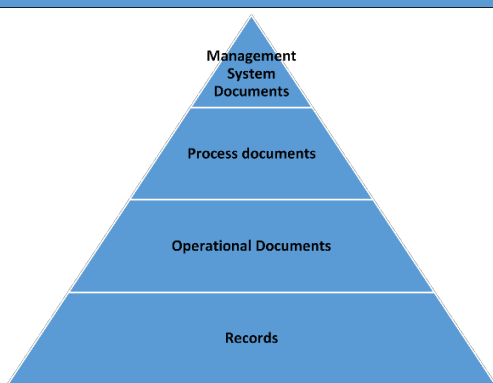
Document Category	<sup>1</sup> Document Type	Handling Procedure	Access point	Repository
	Objectives and Targets Policy Statements Manuals / Policies	3-QSE Control of Management System and Process Documentation	PIT	SharePoint MS repository
	Value Chain Procedures INS, EUP		PIT	SharePoint MS repository
	Technical specifications Drawings Work Instructions Technical Manuals	TBD	DMS, Tech Doc	DMS, Tech Doc
	Reports (progress, financial, inspection etc.) Minutes of Meetings	TBD	TBD	TBD

Figure 1 The document hierarchy of the QHSE Management system documents.

Related documentation:

- MAN QHSE Management System Manual

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## Policy Statement

### What we want to do:

- Support MVOW Mission, Vision and Creeds and thereby our company to be a leading player in the offshore industry through high performing wind turbines, strong partnerships and strong supply chain collaboration.
- Maintain a highly qualified and dedicated workforce who is committed to quality and has a strong focus on safety in the daily work.
- Increase customer satisfaction and create customer value through targeted and focused quality activities.
- Ensure continuous improvement, systematically and effectively make QHSE an integral component of all business processes.
- Be customer focused and create stakeholder value with respect for the environment in which we operate and in compliance with relevant regulatory and ethical requirements.
- Ensure prevention of injuries and ill health in the work force and our surroundings. Ensure high security for our employees and act social responsible.

### How we do it:

- Promote a healthy and safe work environment that engages and empowers employees in Quality, Health, Safety and Environmental matters.
- Recognize and celebrate efforts and milestones that support our drive towards QHSE excellence.
- Collect, analyse and evaluate data and feedback from employees, customers and business partners resulting in risk evaluation and improvement activity for mutual benefit to minimise the cost.
- Minimize the environmental impact of our business through careful use of resources, optimization of operations, and responsible management of waste streams.
- Communicate openly and clearly about QHSE targets and results.
- Establish Quality, Health, Safety, Security and Social requirements and ensure that partners, suppliers and contractors work in accordance with them.

#### Reference Material:

- ISO 14001 Standard, Section: 4.2
- OHSAS 18001 Standard, Section 4.2

#### Related documentation:

- POS HSEQ Policy Statement

## Planning

### Risk Management

MVOW is committed to eliminating or controlling workplace hazards that have the potential to cause injury or illness to employees. Controls to reduce assessed risks to acceptable levels are to be developed and communicated to relevant members of the workforce. Hazards shall be identified for each work activity and the risks to workers and others will be communicated.

MVOW recognises its duty to assess the risks to the health and safety of its employees and others who may be affected by its operations. In order to fulfil this duty, line management are charged with the responsibility for carrying out the formal assessments of risks in the work place, and to determine the necessary preventative and protective measures required.

### Hazard Identification and Risk Management

Information related to environmental aspects is site specific and recorded within the environmental file at site level. MVOW will identify all environmental aspects and related impacts that the site controls or on which it may be expected to have an influence. MVOW sites will determine those aspects that are considered significant.

#### Reference Material

- ISO 14001 Standard, Section: 4.3.1
- OHSAS 18001 Standard, Section 4.3.1

#### Related documentation:

- QSE-INS Hazard Identification and Risk Management
- Risk Assessment Manufacturing TEM
- Risk Assessment Installation and O&M TEM
- QSE-INS Fire Risk Assessment
- Fire Risk Assessment TEM
- First Aid Risk Assessment TEM

### Local, Legal and Other Requirements

The legal requirements applicable to each individual MVOW location or project is assessed by the local HSE Coordinator or Manager. The status is captured via an online compliance manager and all legislations are kept up to date by an external company specialising in HSE legislations.

#### Reference Material:

- ISO 14001 Standard, Section 4.3.2
- OHSAS 18001 Standard, Section 4.3.2

#### Related documentation:

- QSE Legal HSE requirements
- Enhesa Compliance Manager

## Roles and Responsibilities

### CEO

The CEO of MVOW has overall responsibility for the Health, Safety, Environment and Welfare of all MVOW employees and is an active custodian of the MVOW HSEMS and takes ownership of its implementation throughout the MVOW organisation.

The CEO takes suitable and sufficient actions to ensure a healthy and safe working environment for all employees under his responsibility including those of contractors and third party employees ensuring suitable and sufficient resources are available.

The CEO can delegate these activities but cannot delegate his overall responsibility.

### Directors and Managers

The directors and managers in MVOW organisation have the responsibility to ensure the implementation of the HSEMS and take active ownership in the assurance that all employees under their responsibility are safeguarded.

### Head of HSE

Head of HSE is responsible to set the strategy for the HSE work in MVOW in collaboration with Top Management. The Head of HSE also has the primary responsibility for assuring that the appropriate structure is in place to develop and implement the HSEMS. As needed the HSE Manager will assign responsibility for specific tasks and make assignments to HSEMS team members and other facility personnel.

The Head of HSE reports to Top Management on performance of the HSEMS system and incorporate recommendations for improvements. The execution of these tasks may be delegated to members of the HSE Team.

### Supervisors

The supervisors are responsible to participate actively in safeguarding the employees under their responsibility and take part in Health, Safety, Environment and Welfare related briefings and actively participates in ensuring a healthy and safe working environment at their site for all employees including contractors and third party employees. This will include:

- Instruct employees in relevant health, safety and environmental rules.
- Implement new work procedures, instructions or templates and make sure all safe systems of work are followed that have been issued.
- Enforce personnel protective equipment (PPE) requirements; make sure it is available and ensure the PPE is being used.

### Employees

All employees in the MVOW organisation including contractor and third party employees have the responsibility to take reasonable care for the health & safety of themselves and others affected by their acts or omissions, and to actively participate and give attention to all Health, Safety, Environmental and Welfare, information, introduction, and training, and to comply with the HSEMS regulations to fulfil their task safely. Employees must use any equipment or substance in accordance with any training or instruction given by the employer, follow procedures in the sequence and timing of application indicated,

and use all means to isolate themselves and others from harm – e.g. effective isolation of any energy source, and testing to ensure the isolation is effective before work commences.

Employees safeguard the input of the HSEMS improvements by means of reporting hazardous observations, reporting a situation that describes a near miss, incident or accident. This is considered a necessity to continuously improve the Health Safety and Environmental Management System in the MVOW organization.

## HSE Co-Ordinators

The HSE Co-Ordinators (HSEC) sole responsibility is to provide advice to all MVOW management and employees and to actively participate in the establishment of arrangements, systems and risk control standards providing relevant Health, Safety, Environmental and Welfare information to all employees and to provide the Management Team with up-to-date, correct and accurate information concerning Health, Safety, Environmental and Welfare issues. HSEC's are supported by a HSE Manager or Project Manager, and have access to HSE Specialists who offer topic specific support and advice.

## Employee Safety Representatives

The Employee Safety Representative is responsible for communicating relevant input from individual employees, employee briefings and employee findings to the site responsible manager to ensure improvements to the Health, Safety, Environment and Welfare of employees working environment is safeguarded. The Employee Safety Representative is an important link in safeguarding the communication between employees and the site responsible manager and the designated HSE co-ordinator.

## Contractors and Third Parties

The Contractors & Third Parties responsibilities is to ensure that the execution of their activity and the risks accompanying that activity for MVOW organization and its employees is clear and known to all, and all necessary precautions are taken according to the latest known legislation on their field so the Health, Safety, Environment and Welfare of all is safeguarded. The Contractors & Third Parties employees need to be fully informed about the MVOW organization's HSEMS and comply with its policy and principles.

## Reference Material

- ISO 14001 Standard, Section 4.4.1
- OHSAS 18001 Standard, Section 4.4.1

## Related documentation:

- POL Alcohol and Drug Policy
- QSE-INS Incident Management
- QSE-INS Work Environment Organisation and Safety Representatives
- QSE Third Party HSE Requirements

## Training requirements

All personnel must be trained for the work that they do. Both the person conducting the work and the direct manager carry the responsibility for ensuring that the training has been conducted and that refresher courses are scheduled so that the employee at all times have valid work permits. If it is noticed that an employee doesn't hold valid work permit he or she will be suspended or assigned to other task until the certificates can be renewed.

Training will be undertaken to meet the requirements of individual roles and responsibilities and is recorded in the Training Matrix, which responsibility lays with the training department. Any additional training required for specific activities or when identified through Risk Assessment will be undertaken by relevant personnel.

Competency shall be defined in terms of appropriate education, training, knowledge and experience. It is the responsibility of the hiring manager to establish and maintain the competency of any hired person or contractor. The Training Department is charged with processing requests for training against the approved requirements as set out in the HSE Competency Matrix.

## Reference Material

- ISO 14001 Standard, Section 4.4.2
- OHSAS 18001 Standard, Section 4.4.2

## Related documentation

- Training Matrix
- Training Rooster
- HSE Competency Matrix TEM

## Consultation and Communication

### Consultation

MVOW consults directly with all of its employees on Health, Safety and Environmental issues.

Any employee who wants to highlight a problem or suggest improvements on Health, Safety and Environmental concerns are encouraged to speak with their Line Manager, Local HSE Manager or Co-ordinator, or Employee Safety Representative. By pooling the knowledge and experience through consultation and the co-operation of its workforce, helps to establish a positive culture and understanding that the company as a whole, and the people working in it, benefit from good Health, Safety and Environmental performance.

### Communication

MVOW promotes and maintains an awareness of the importance of health and safety issues by the use of written, verbal and visual communication. Discussion of health and safety issues is encouraged at all levels.

In MVOW various mechanisms exist for the dissemination of Health, Safety and Environmental information, such as:

- Induction processes
- Training courses
- Commendation
- Management meetings
- Board meetings
- Safety Committee meetings
- Safety Alerts and work instructions
- Toolbox meetings
- Posters, newsletters

- E-mails and SharePoint access
- Company Intranet
- Visible behaviour in support of health, safety and environment

## Reference Material

- ISO 14001 Standard, Section 4.4.3
- OHSAS 18001 Standard, Section 4.4.3

## Related documentation

- QSE Consultations and Communication
- Safety Alert TEM
- Safety Notification TEM
- QSE-INS Toolbox Talk

## Document control

The MVOW Health, Safety and Environmental Management system is controlled by document management process controlling all documentations in ISO 9001, ISO 14001 and OSHAS 18001.

## Reference Material

- ISO 14001 Standard, Section 4.4.5
- OHSAS 18001 Standard, Section 4.4.5

## Related documentation:

- MAN Document and Record Management
- QSE Control of Management System Documents

## Records and Records Management

Records are to be maintained in a way that ensures they are easily retrievable and protected against damage, deterioration or loss. They need to be retained in archives for both statutory and contractual reasons. Records shall be legible, identifiable and traceable to the activities/projects involved. Such records demonstrate conformance with the Health, Safety and Environmental Management System.

Typical records would include:

- Accident Reports
- Toolbox Talks
- Copies of Training Certificates
- Risk Assessments
- Revised Procedures
- Audit Reports
- Management Review Minutes

All HSE Records must be stored in hard copies on site for minimum twelve months, and electronically in agreed locations. If local regulations required longer retention persons for some records this must be complied with. On site-level it must be known to all employees where the local copies are stored.



- Retention periods of records shall be defined by legal requirements or as felt necessary by the MVOW Health, Safety and Environmental Manager or Coordinator.
  - It is the responsibility of the Site/ project manager to assure that these requirements are followed.
- The Site/ Project manager together with the HSE responsible of the location, are responsible for identifying records that will be maintained by the company as part of the HSEMS and ensure compliance with HSE statutes and regulations. Moreover, they review the records and purge obsolete records at least every 2 years.

## Reference Material

- ISO 14001 Standard, Section 4.5.4
- OHSAS 18001 Standard, Section 4.5.3

## Related documentation:

- MAN Document and Record Management

## Operational Control

Operational control consists of a set of HSE instructions and templates all aiming to assist the employee in conducting the daily activities in a safe manner. Templates and instructions are to be seen as live documents and changes can be made to them as required due to organisational, product or legislative changes. It is the responsibility of the employee to assure that the latest instruction or template is being used. The latest version will always be available online via the Process Integration Tool (PIT).

The responsible manager must ensure that all employees, subcontractors and other relevant partners in the operation are provided with the documents and information required for performing their task.

The presentation of the areas below all refer to the following reference material:

- ISO 14001 Standard, Section 4.4.6
- OHSAS 18001 Standard, Section 4.4.6

## Driving Safely at Work

MVOW have a Duty of Care to all employees who are required to drive vehicles for work related purposes. Workplace transport means any vehicle that is used in a work environment. This includes carrying out their normal work duties, commuting to and from work, and the occasional journey to other work sites.

Transport of people and goods should be carried out safely. Employees involved in driving vehicles, whether commercial or private vehicles on work matters should fully familiarise themselves with the contents of the related documentation.

## Related documentation:

- QSE-INS Driving Safety

## Control of Hazardous Energy – Electrical & Mechanical Safety

Safe systems of work (SSOW) are provided and enforced for all work activities based on an assessment of the risks associated within MVOW work activities. The SSOW consists of a risk assessment and associated method statement (RAMS) and a permit to work element, such as WTSR AWP, or LOTO WI.

The permit to work element controls general safety of the workplace, and safety from the system, while the RAMS control the risks posed by the work, and step by step the method of work to be carried out.

The Electrical Safety Committee (ESC) are the custodians of the Control of Hazardous Energy Standard. The ESC sets the requirements for MVOW to meet these standards and monitor them via audit and inspection

Related documentation:

- Wind Turbine Safety Rules
- Electrical Safety rules
- Lockout Tag Out

## Stop Work

Whenever an employee, contractor, or guest encounters conditions or practices that appear to constitute an imminent danger, such individuals have the authority and responsibility to:

- Alert all personnel engaged in the unsafe work creating an imminent-danger condition and request that the work be stopped.
- Report the incident.
- Notify the immediate supervisor and/or responsible manager.

An “imminent danger” is defined as any condition or behaviour that could reasonably be expected to cause death or serious injury, or environmental harm.

Note: When in doubt about a safety condition, contact your manager or supervisor.

## Alcohol and Drug Policy

MVOW recognises that the company and individuals can be put at risk by those who misuse alcohol or drugs to such an extent that it may affect their health, safety, performance, conduct and relationships at work.

The company policy states that “no person must be under the influence of drugs or alcohol on any worksite”. Any person taking prescribed medication should make their line manager aware of the medication so a decision can be made before resuming his/her normal work.

In the event that a person is suspected of being under the influence of drugs or alcohol, the supervisor will follow protocols in line with MVOW Drugs & Alcohol Procedure

Related documentation:

- POL Alcohol and Drug Policy

## Work Equipment

The definition of work equipment is any equipment used by an employee at work, the scope is very wide ranging and covers items such as mobile cranes, forklift trucks, motor vehicles, generators, scaffolding, ladders, photocopiers, power tools, and basic hand tools.

MVOW shall ensure that all work equipment whether it is owned or hired in, is suitable for the task and is safe for use by persons under its control.

Prior to such use, MVOW shall ensure that all employees have received adequate information, instruction, and training on specific work equipment. Such training shall ensure that each employee



understands the limitations, the safe use of and the operator checks to be carried out on such equipment, to help maintain it in a safe condition. All equipment shall be inspected and/or tested and records kept.

Under no circumstances shall any employee remove or disconnect a guard or safety feature from an item of work equipment when in general use. Such action shall be dealt with under the MVOW disciplinary procedure.

Related documentation:

- QSE-INS Work Equipment

## Working at Height

Falls from height is the biggest cause of fatal and serious injuries within our working environment.

Therefore, careful consideration shall be given to the provision of safe access/egress and working platforms whenever personnel are required to work at height. In all cases, MVOW requires a documented risk assessment and work instruction.

In trying to reduce the potential of a 'falling from height' accident, the use of ladders and step ladders shall only be considered where thorough risk assessment has identified that there is no practicable alternative to their use and the work is of short duration and light duty.

Where ladders and step ladders are used they shall be of an industrial grade, able to withstand the rigors of the work environment. In the case of electrical work being carried out from such equipment, they shall be of wooden, fibreglass, or polycarbonate construction.

Related documentation:

- QSE-INS Working at Height

## Manual Handling

Manual handling activities result in many lost time injuries causing pain and loss of earnings to the individual and the company. Where it is not reasonably practicable to avoid manual handling operations all activities involving manual handling must be risk assessed and managed according to MVOW instruction. Appropriate training will be provided for all staff carrying out manual handling activities

Related documentation:

- QSE-INS Manual Handling

## Chemical Management

Many of the substances used in the wind industry can be hazardous to health, e.g. solvents, resins, mineral oils, etc. It is important that the use of chemicals and the processes that may generate hazardous substances are all adequately assessed and suitable controls are then implemented.

All substances used at MVOW sites must be approved by the environmental specialist before taken into use. The SDS and other required documentation for all approved chemicals are available in the chemical management database, 3E.

The Chemical and Material Blacklist provides an overview of the prohibited materials. No substances on the Chemical and Material Blacklists shall to be used at any MVOW Sites or by any subcontractors.

Related documentation:

- QSE Chemical Management
- MAN Chemical and Material Blacklist

## Personal Protective Equipment (PPE)

Personal protective equipment [PPE] must be in place when the source of the risk and / or possibility of harming an employee can't be avoided or solved. PPE must always be seen as a last resort or means of protection.

Where multiple items of PPE are required they will be compatible to avoid one piece of PPE compromising the effectiveness of another. Due to the nature of our work, eye protection is considered mandatory unless a risk assessment documents that – under specified circumstances – no hazard exist.

Related documentation:

- QSE-INS Personal Protective Equipment

## Work Instruction

A Work Instruction (Method Statement) is a written stage-by-stage instruction for carrying out an activity safely.

Work Instructions (Method Statements) are developed to give a clearer understanding of the hazards and risks associated with the work therefore providing greater understanding of the detailed control measures required.

The requirement for a Work Instruction (Method Statement) will be required where the company assesses an activity as safety critical; giving reassurance that the safety management aspects of the activity have been given sufficient thought and planning.

It should be concise, understandable & communicated, create a logical sequence of events and address the hazards identified in the Risk Assessment.

Related documentation:

- Method Statement TEM

## PAT (Portable Appliance Testing)

Portable electric tools including moveable office equipment will be regularly tested for faults and for serviceability. A comprehensive list of equipment requiring testing be kept on site which include as a minimum, individual serial numbers, date tested and date to be re-tested. MVOW departments will undertake testing and documentation of those items.

Defective tools and equipment that fail testing will be taken out of service and immediately placed in quarantine. Repair and PAT testing of tools will be undertaken by a competent person who is certified to do so by a recognised body.

## Office ergonomics

Offices are considered as relatively safe environments, but they have their own hazards, among them are hazards associated with workstations, visual fatigue, manual handling and mental stress. Workers in this environment tend to be more exposed to health risks than hazards threatening physical injury.

There is a duty to ensure that effective safe systems of work are in place for office activities after considering the hazards and risk involved. The assessment will be reviewed when major changes are made to software, hardware, furniture, environment or work requirements.

Related documentation:

- QSE-INS Office Ergonomics
- Work Place Assessment

## Isolated Working

Isolated working can be defined as a worker physically alone and who cannot make immediate direct contact, visually or verbally with other staff. Isolated Working can also apply to a Two-man Team working on a WTG outside normal working hours, where the availability of support may be limited.

There are also specific work situations where the law or local standards requires that at least two employees must be present during an activity.

Managers must ensure that any additional risks faced by isolated working are addressed within the general risk assessment process. The Isolated and lone Working instruction details the necessary risk control measures to be taken where potentially there are heightened risks due to isolated working.

All employees have a duty to bring to the attention of their line manager any condition that may make them unsuitable for lone or isolated working.

Related documentation:

- QSE-INS Isolated and Remote Working

## Lifting Operations

Where lifting operations using mobile cranes are carried out by MVOW, such operations shall be planned by a competent person, who can be an internal or external resource.

Sub-contractors carrying out lifting operations under the control of MVOW shall provide suitable information to verify that the lifting operation has been planned by a competent person and the relevant resources shall be provided i.e. trained personnel, supervision, barriers, before commencing the operation.

MVOW operates a policy of 'no working under suspended loads'. 'Under' a suspended load means working close to that load such that the load may trap, or collide with an operative. Any work close to or under a suspended load therefore must be 'managed by exception', with specific and detailed instructions to minimise the level of risk.

Related documentation:

- QSE-INS Lifting Operations

## Permit to work

Permit to Work system is a formal safety control document designed to prevent injury to employees, contractors and third parties as well as to property, particularly when work with foreseeable high hazard content is undertaken. The permit sets out the work to be done, precautions to be taken and the responsibilities of individuals.

Works that require Permit to Work is:

- Confined space working;
- Hot works such as welding, use of open flames and grinding;
- Working at height;
- Certain excavation works;
- Maintenance work on lifts, conveyors, hoists etc.;
- Work on high voltage
- Work involving the use of hazardous/dangerous substances.
- Crane activities

Related documentation:

- QSE-INS Permit to Work

## Visitors

MVOW has general duties to ensure that risks to people's health and safety from work activities, including members of the public, contractors, visitors and others are properly controlled. In order to reduce or control these risks related to visitors, suitable planning, organisation and implementation is essential.

Escorted visitors may be permitted subject to their being judged suitable, able bodied and being given a suitable visitor induction by the site manager or his representative. Visitor inductions will include awareness of the site rules for each of the areas to be visited. They are granted access only if escorted by two fully trained and competent persons at all times.

If going offshore, all visitors will have to self-certify they are fit and will be required to sign the Self-Declaration of Medical Fitness.

Related documentation:

- Self-Declaration of Medical Fitness TEM

## Access and Egress

Access to onshore sites is managed and controlled locally. Guidance for access to off-shore sites is given in QSE-INS Access & Egress Procedures. Access will be strictly controlled by site management in conjunction with a marine controller. Personnel required to carry out work offshore will be suitably qualified and be authorised by the site management.

Related documentation:

- QSE-INS Access & Egress to a Wind Turbine
- Access & Egress Plan TEM

## Confined Spaces

Under normal operating conditions, the offshore WTG is not defined as a confined space. There are occasions where specific parts of the WTG may become designated a confined space due to the type of work intended to be undertaken. On these occasions a permit-to-work procedure will be used for a safe system of work.

Work in confined spaces will only be undertaken if it is not reasonably practicable to perform the necessary work in any other way, and so far as is reasonably practicable, where there is a system of work in place to ensure such work is safe and without risks to the health.

No work in confined spaces will be carried out unless there are suitable and sufficient arrangements in place to rescue workers in an emergency. Such arrangements will be able to be put into immediate operation.

Related documentation:

- QSE-INS Confined Space

## Environmental Management

MVOW is committed to continual improvement in environmental performance based on the principals of sustainable development. The implementation of a Waste Management plan and a Marine Pollution Contingency Plan is the cornerstones of this process. The plans must consider any national or local legal requirements as well as freely entered agreements and conventions.

Related documentation:

- Marine Pollution Contingency Plan TEM
- Waste Management Plan TEM

## Security

Security of personnel and equipment is accomplished in three areas.

- Offshore Security
- Onshore Security
- IT Security

These areas are covered in the MVOW Security Manual and the MVOW Information Security Policy.

## Emergency Preparedness and Response

MVOW has established procedures for its response to emergencies that may arise on projects or work locations under its control. The procedures shall address such issues as:

- The involvement of external agencies, neighbours and other employers at the work location
- Names of personnel with the responsibility to ensure the arrangements are maintained
- Communication with all parties
- Equipment to be used, its suitability and ongoing maintenance
- Emergency drills and practices

Note: Emergency Procedures may have to be modified in order to meet local requirements and arrangements. At each site, the site manager or the project manager has the responsibility to prepare and carry out one desktop and one live emergency exercise per year.

Reference Material

- ISO 14001 Standard, Section 4.4.7
- OHSAS 18001 Standard, Section 4.4.7

## Related documentation:

- QSE-INS Emergency Evacuation Plan V80
- QSE-INS Emergency Evacuation Plan V90
- QSE-INS Emergency Evacuation Plan V112
- QSE-INS Emergency Evacuation Plan V164
- QSE-INS First Aid Assessment
- Emergency Response Plan TEM
- Marine Pollution Contingency Plan TEM

## Setting and tracking of HSE Objectives and Targets

### Objectives

MVOW has set specific objectives for health safety and the environment within its business plans for the period under review.

The aim of these objectives is to continually reduce further, any residual risk from significant hazards within the workplace. These objectives shall be a driving force for continuous improvement.

Objectives shall be based on:

- The consideration of national legal standards, technological options, financial resources, operational and business requirements.
- The results of audits, inspections and reviews of the Health Safety and Environmental Management System in the previous year.
- A review of the risks (to people and the environment) from our undertakings.
- Any feedback from MVOW policy changes for the year.
- Changes in legislation, significant organization changes and key personnel, network methods have been introduced. Customer and industry initiatives.

Programmes to follow up on the objectives are developed to suit each 'Objective Project'. Each programme shall include, as a minimum:

- The resources allocated.
- The designated responsibility for implementation and achievement of the objectives at relevant functions and levels of the organisation.
- The means and timescale by which objectives are to be achieved.

Objectives and programmes are monitored and reviewed at regular planned intervals. When required, management programmes will be modified to address any changes to the activities, operating conditions, etc., of MVOW.

### Reference Material

- ISO 14001 Standard, Section 4.3.3
- OHSAS 18001 Standard, Section 4.3.3

## Related documentation:

- QSE Setting and Tracking of HSE Targets

Approved

## Performance Measurement and Monitoring

Performance measurement and monitoring is an essential part of the Health Safety and Environmental Management System. It is required to ensure that the following are being achieved:

- MVOW objectives are being met
- Risk controls are being implemented and are effective
- Compliance with legislation
- Lessons are being learnt from accidents and system failures
- Awareness, training and communication are effective
- Information is available for management reviews and improvements

Measurement and monitoring is made up of proactive as well as reactive monitoring. The level and intensity of these shall be arranged to reflect the assessed risk of the workplaces. Hence, the frequency and depth of monitoring are of a higher intensity on construction projects than within the office environment. A formal celebration session is carried out at sites with 500, 1.000 and 1.500 days passed since last Lost Time Injury (LTI) with absence > 1 workday.

## Monitoring of Objectives

Monitoring of objectives set by MVOW shall be monitored at many levels, including:

- Formal meetings between the CEO and the head of HSE
- Board Meetings
- Management Meetings
- Safety Committee Meetings
- Site Visits
- Key Performance Indicators (KPI) for individuals
- Director Safety Tours

## Incident Management

### Incident Reporting

All incidents resulting in injury or ill health and dangerous occurrences must be reported in accordance with the MVOW incident reporting procedure. Any reporting requirements under the local country legislation must be complied with.

The records of reported incidents are used to develop strategies to further prevent incidents and continuously improve the safety at the workplace.

### Investigation

MVOW is committed to the thorough and open investigation of accidents and failures of the Health Safety and Environmental Management System.

No manager or employee will be disciplined as a result of being open and honest during the course of any investigation, unless it can be shown that they were wilfully negligent or deliberately disobeyed a clear order or instruction. If information is subsequently found to have been withheld, then disciplinary action may be taken against that individual under the disciplinary procedure.

Any learning points from accidents or safety failures shall be disseminated to all persons where necessary, across the organisation.

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## Reference Material

- ISO 14001 Standard, Section 4.5.3
- OHSAS 18001 Standard, Section 4.5.2

## Related documentation:

- QSE Incident Management

## Audits

Audits are systematic, independent evaluation of the management system and its implemented policies, manuals, procedures, instructions and templates. All audits have been predefined in the MVOW audit plan and are carried out in a formal approach either by internal auditors or by third party auditors.

Individual action plans are being prepared post audit and the audit is not considered completed until evidence had been submitted that all findings have been closed out and registered in the audit database.

All Audit activities are coordinated for ISO 9001, ISO 14001 and OSHAS 18001.

## Reference Material

- ISO 14001 Standard, Section 4.5.5
- OHSAS 18001 Standard, Section 4.5.4

## Related Documentation:

- QSE Planning and Preparing Audits

## Management Review

The Management Review shall include assessing opportunities for improvement and the need for changes to the management system, including the quality and HSE policy and quality and HSE objectives and targets.

If, following the review, significant revisions and/or major policy changes are required, they shall be approved by the CEO. Minor alterations, however, shall be incorporated without prior approval.

## Reference Material

- ISO 14001 Standard, Section 4.6
- OHSAS 18001 Standard, Section 4.6

## Related documentation:

- QSE Management Review

## Safety Violations / Discipline

MVOW requires employees to work according to all established HSE policies, procedures, and instructions.

An employee found to have committed a safety violation could be terminated immediately. A thorough investigation of the circumstances must be carried out by MVOW. The employee may be suspended



while this investigation is being conducted. MVOW management will make a determination for termination on a case-by-case basis. If an employee is to be suspended or terminated, the manager must consult with the HR Business Partner first, in order to ascertain any legal requirements. The CEO need to be notified of the circumstances surrounding the situation and told of any impending action or action taken.

Approved

Icebreaker Windpower, Inc.  
Case No. 16-1871-EL-BGN  
Public Disclosure of Application Exhibits S and P  
June 22, 2018

## **Exhibit P**

Fred. Olsen Ocean HSE Manual



# HSE Manual

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Fred. Olsen Ocean  
Fred. Olsen Windcarrier  
Fred. Olsen Marine Services  
Universal Foundation  
Global Wind Service



### CHANGE LOG:

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## Table of contents

<b>1</b>	<b>INTRODUCTION .....</b>	<b>6</b>
1.1	SCOPE.....	6
1.2	DOCUMENT HIERARCHY.....	6
1.3	REQUIREMENT TERMINOLOGY.....	7
1.4	AUTHORITY TO APPROVE DEVIATIONS .....	7
1.5	AUTHORITY TO STOP WORK .....	7
1.6	ORGANISATION, RESPONSIBILITIES AND AUTHORITIES.....	7
1.7	HSEQ POLICY AND OBJECTIVES .....	8
<b>2</b>	<b>GENERAL HSE REQUIREMENTS .....</b>	<b>8</b>
2.1	COMPLIANCE STATEMENT .....	8
2.2	PERSONAL PROTECTIVE EQUIPMENT (PPE) .....	9
2.3	WORKING AT HEIGHTS.....	10
2.4	DROPPED OBJECTS.....	11
2.5	CONFINED SPACE WORK.....	12
2.6	LIFTING OPERATIONS.....	13
2.7	HOT WORKS .....	14
2.8	USE OF MOBILE ELEVATED WORK PLATFORMS (MEWP) .....	16
2.9	USE OF TELEHANDLERS, FORKLIFTS AND MOBILE CRANES .....	17
2.10	USE OF PORTABLE GENERATORS .....	18
2.11	USE OF MAN-BASKETS .....	19
2.12	CHEMICALS HANDLING.....	20
2.13	NOISE .....	21
2.14	ELECTRICAL WORK .....	22
2.15	ENVIRONMENTAL .....	23
2.16	TRAVEL.....	25
2.17	COMPANY VEHICLES AND RENTAL CARS .....	26
<b>3</b>	<b>OFFSHORE SPECIFIC HSE REQUIREMENTS .....</b>	<b>27</b>
3.1	PERMIT TO WORK (PTW) SYSTEM .....	27
3.2	USE OF FRC, RIBS, AND SMALL BOATS .....	28
3.3	PERSONNEL TRANSFER OFFSHORE .....	29
3.4	HELICOPTER OPERATIONS.....	30
3.5	PERSONNEL MOVEMENT ON/OFF BRAVE TERN AND BOLD TERN .....	31
3.6	DIVING.....	32
3.7	REMOTELY OPERATED VEHICLES (ROV) .....	32
<b>4</b>	<b>HSE MANAGEMENT REQUIREMENTS.....</b>	<b>33</b>
4.1	SHIFT HAND-OVER MEETINGS.....	33
4.2	TOOLBOX TALKS.....	33
4.3	SAFETY MEETINGS .....	34
4.4	LANGUAGE.....	34
4.5	MANAGEMENT SYSTEM CERTIFICATIONS .....	34
4.6	HSE AUDITS .....	35
4.7	SAFETY INSPECTIONS.....	35
4.8	HSE INCIDENT REPORTING AND INVESTIGATION.....	36
4.9	PERIODIC HSE REPORTING .....	38



<b>5</b>	<b>RISK MANAGEMENT REQUIREMENTS.....</b>	<b>39</b>
5.1	RISK MANAGEMENT APPROACH .....	39
5.2	RISK ASSESSMENT, TASK RISK ASSESSMENT AND 'TAKE2' .....	39
5.3	RISK CRITERIA AND RISK FACTORS.....	40
<b>6</b>	<b>TRAINING REQUIREMENTS.....</b>	<b>42</b>
6.1	GENERAL TRAINING REQUIREMENTS .....	42
6.2	TRAINING REQUIREMENTS FOR PERSONNEL WORKING OFFSHORE .....	43
6.3	SAFETY INDUCTIONS.....	44
<b>7</b>	<b>HEALTH RELATED REQUIREMENTS .....</b>	<b>45</b>
7.1	MEDICAL FITNESS .....	45
7.2	DRUGS AND ALCOHOL .....	45
7.3	WELFARE FACILITIES.....	46
7.4	WORK HOURS.....	46
<b>8</b>	<b>EMERGENCY RESPONSE REQUIREMENTS.....</b>	<b>47</b>
<b>9</b>	<b>DOCUMENT REVISION HISTORY .....</b>	<b>48</b>
9.1	REVISION A.....	48
9.2	REVISION B.....	48



## Acronyms and abbreviations

BOT	Bold Tern
BRT	Brave Tern
CA-EBS	Compressed Air – Emergency Breathing System
COSHH	Control of Substances Hazardous To Health
CTV	Crew Transfer Vessel
DPR	Daily Progress Report
ERP	Emergency Response Plan
FOM	Fred. Olsen Marine Services
FOO	Fred. Olsen Ocean
FOWIC	Fred. Olsen Windcarrier
GWO	Global Wind Organisation
GWS	Global Wind Service
HSE	Health, Safety and Environment
HSEQ	Health, Safety, Environment and Quality
ICC	Isolation Confirmation Certificate
LOTO	Lock-Out-Tag-Out
LTI	Lost Time Injury
MARPOL	International Convention for the Prevention of Pollution from Ships
MEWP	Mobile Elevated Work Platform
MOB	Man Over Board
OCM	Offshore Construction Manager
OWF	Offshore Wind Farm
PLB	Personal Locator Beacon
PPE	Personal Protective Equipment
PTW	Permit to Work
RA	Risk Assessment
ROV	Remotely Operated Vehicles
RUK	Renewable UK
SAFO	Safety Officer
SDS	Safety Data sheet
TBT	Toolbox Talk
TRA	Task Risk Assessment
UF	Universal Foundation
WICINT	Fred. Olsen Windcarrier International, Malta
WTG	Wind Turbine Generator



# Fred. Olsen Ocean - HSE Manual

## 1 Introduction

### 1.1 Scope

This Health, Safety, and Environment (HSE) manual, with its requirements, is governing document and applies to all companies in Fred. Olsen Ocean (FOO):

- Fred. Olsen Windcarrier AS (FOWIC), Norway
- Fred. Olsen Windcarrier A/S (FOWIC DK), Denmark
- Fred. Olsen Marine Services AS (FOM), Norway
- Universal Foundation A/S (UFD), Denmark
- Global Wind Service (GWS)
- Fred. Olsen Windcarrier International Ltd (WICINT), Malta
- Fred. Olsen Windcarrier Ltd (FOWIC UK), United Kingdom
- Fred. Olsen Windcarrier GmbH (FOWIC DE), Germany

The requirements in this HSE Manual applies to:

- Vessels owned by or operated by FOO companies
- Activities on any other vessel chartered by an FOO company
- Onshore sites under direct management of an FOO company

All employees FOO shall read this HSE manual and be familiar with its content.

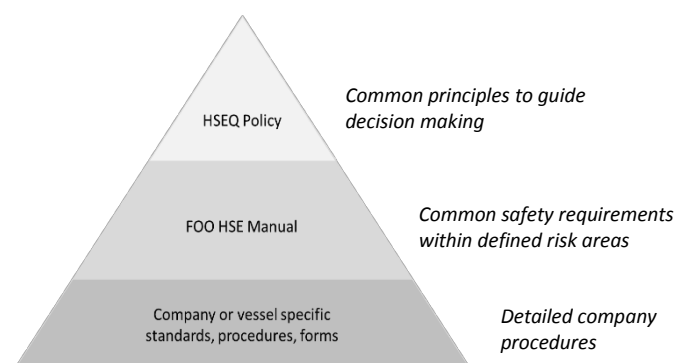
### 1.2 Document hierarchy

The HSEQ Policy (see Paragraph 1.7) provides the overall principles to guide decision making.

This HSE Manual defines the overall common safety requirements for activities within defined risk areas.

Based on these requirements, each company provides standards, procedures, checklists and forms.

Requirements in the FOO HSE Manual takes precedence over company requirements.







### 1.3 Requirement terminology

In this manual, the following verbal forms are used:

- “Shall” indicates a mandatory requirement
- “Should” indicates a recommendation
- “May” indicates a permission
- “Can” indicates a possibility or a capability


### 1.4 Authority to approve deviations

The Managing Director of the FOO company responsible for an activity is authorised to approve deviation from the HSE Manual requirements on a case-to-case basis.

### 1.5 Authority to stop work

All personnel is authorised to stop work:

**Stop work policy**



**You are fully authorised to stop any work that you consider to be unsafe.**

This means that you have the right - and the responsibility - to stop your own or other persons' work if you believe that it threatens the safety for personnel or may result in material damage or an environmental incident.

The person in charge of the operation will review your notification and decide whether it is safe to continue or not.

Stop work should be recorded on Observation Card.

### 1.6 Organisation, responsibilities and authorities

Organisation charts, responsibilities and authorities are described in each company's HSEQ management system.



## 1.7 HSEQ policy and objectives

FOO's policy for health, safety, environment, quality (HSEQ) is:

### FOO HSEQ Policy

We are committed to be recognised as a leading organisation for Health, Safety, Environment and Quality (HSEQ) management.

We are committed to the protection of personnel, vessels, equipment and the environment. In fulfilling this, we will establish and maintain a safe and healthy work environment.

We are committed to conduct our work in compliance with regulatory laws, rules and regulations, client requirements and industry standards.

We are committed to manage risks through the use of systematic risk assessments as an integrated part of our work.

Our aim is always:

- Meeting or exceeding customer requirements and expectations
- Zero injuries
- Zero unintended environmental spills
- Zero defects
- On time delivery
- Continuous improvement

Each company has defined a specific HSEQ policy and objectives to suit its types of activities. The FOO HSEQ Policy takes precedence over company policies.

## 2 General HSE requirements

The requirements in this chapter applies to activities both onshore and offshore.

### 2.1 Compliance statement

#### HSE req. 001 Compliance with applicable laws, rules and regulations

All work shall be conducted in compliance with laws, rules, and regulations that apply for the activity.



## 2.2 Personal Protective Equipment (PPE)

Regardless of type of activity and independent of exposure to risks, a minimum set of PPE shall be used at all work sites.



### HSE req. 002 Minimum Personal Protective Equipment (PPE)

- 1) At worksites, in this context defined as on board vessels, in fabrication workshops, onshore installation sites, load-out areas etc., the following minimum PPE shall always be worn:
  - Safety boots\*
  - High visibility work clothes covering bare skin\*\*
  - Gloves \*\*\*
  - Helmet
  - Eye protection \*\*\*\*
- 2) Depending on the type of work, and subject to risk assessments and local site regulations, additional PPE should be used as needed
- 3) A manager in charge of a work site can decide additional minimum PPE to be used, but cannot reduce the minimum PPE without approval from Managing Director

#### Remarks:

\* Safety shoes are allowed for marine crew working inside the vessel and for day visitors and personnel doing temporary work on board in port.

\*\* On board vessels, the Master may allow exemptions to work clothes covering bare skin on warm days. All exemptions are subject to a case specific risk assessment facilitated by the SAFO, taking in to considering work to be performed on site (e.g., physical construction, hot works, lifting operations, etc.)

At onshore worksites, the local manager may allow exemptions to work clothes covering bare skin on warm days.

\*\*\* Types of gloves to be used dependent of type of work. Gloves may be removed if it is needed to work with bare hands.

\*\*\*\* Safety glasses/visor can be removed temporarily during critical phases of lifting operations, in the event that visibility is considerably reduced due to use of eye protection in combination with environmental conditions such as rain, low sun, or artificial lighting.



## 2.3 Working at heights

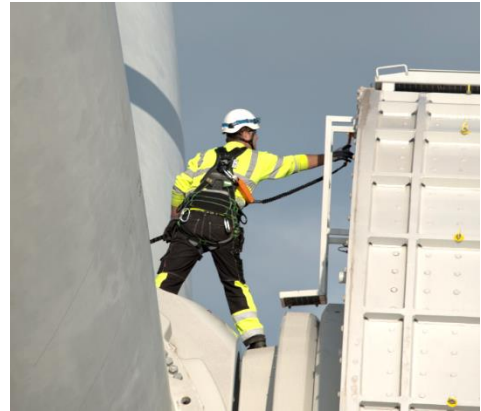
Working at heights is defined as:

*'...work in any place where, if there were no precautions in place, a person could fall a distance liable to cause personal injury.'*

Around 60% of all major injuries are caused by falls from heights below two metres.

As a general rule, working at heights should be avoided if possible.

Some work is performed using 'rope access'. This work requires trained and certified rope access technicians.



### HSE req. 003 Working at heights

When work needs be done at height, the following rules shall be followed:

- 1) Work at height shall be planned carefully, including the need for tools, materials and safety equipment
- 2) Alternatives should be assessed, i.e., use of scaffolding, Mobile Elevated Work Platforms (MEWPs), moveable work platforms/stepladders, use of rope access climbers, etc.
- 3) Risk Assessment (RA) or Task Risk Assessment (TRA) shall be provided for working at heights, covering all hazards influencing the activities
- 4) Working at heights on board vessels shall be covered by Permit to Work (PTW)
- 5) Personnel that work at height or supervise work at height shall have the following training:
  - a. GWO 'Working at heights', or:
  - b. RUK 'Working at Height & Rescue Training - Wind Turbines'
  - c. Personnel working in the German sector shall renew certificate yearly
- 6) When working at heights, rescue equipment shall always be available
- 7) Equipment used for lifting or securing personnel shall be inspected and re-certified by a competent person or authority every sixth month
- 8) Ladders, scaffolds and steps shall be checked before use and shall be approved according to applicable standards. Telescopic ladders are not allowed for use
- 9) Fall arrest equipment shall be checked before use
- 10) Prior to start, the operators shall check that tools, radios and other loose objects are secured with lanyards, pockets are emptied, and safety helmets are secured with chin strap
- 11) Conduct Toolbox Talk (TBT)/Take2 before work starts

## 2.4 Dropped objects

The term 'dropped objects' equals the term 'falling objects', e.g., tools, equipment, or loose items falling from height, creating a risk for personnel injuries – often potentially fatal – or material damage.

Dropped objects represent a large number of the reported injuries and near misses in the wind industry. A substantial amount of our activities takes place aloft, often with high potential for dropped objects.



### HSE req. 004 Dropped objects

- 1) Working at a level under on-going work above is not allowed, working above people underneath is not allowed
- 2) Two independent safety barriers shall be in place whenever there is a risk for dropped objects
- 3) Tools and other loose objects shall be secured using lanyards or cords, suitable for stopping a fall. Tools with weight <2 kg should be secured with lanyard with weak link, and may be attached to operator. Tools >2 kg should be attached to the structure or anchor point
- 4) Red/white no-access barriers shall be established around the drop zone. The drop zone shall be large enough to prevent people from being hit. As a norm, the radius of the drop zone should be 1/3 of the potential fall height
- 5) Prior to lifting operations, the load shall be checked for any loose objects
- 6) Shackles for lifting shall be 4-part type (body, bolt, nut, locking pin). Cotter pins shall be used on all permanent lifting arrangements, locking clips may be used on temporary lifting arrangements
- 7) Minimum 2 m distance to the load when lifting. No direct contact between people and load. However, when the load is at 0.5 m from touch-down, contact may be made for final positioning
- 8) After finishing work at height, the area shall be thoroughly inspected. No tools or equipment shall be left unsecured at height
- 9) Work platforms, scaffolding platforms, gangways and edges around hatches shall be equipped with permanent or temporary kick-boards of minimum 10 cm height
- 10) Fixed equipment above should be fastened with secure bolt connections (castle nut, palnut, nylock, split top nut, or similar)
- 11) Conduct Toolbox Talk (TBT)/Take2 before work starts



## 2.5 Confined space work

A confined space (enclosed space) is defined as a work place that has:

- Limited openings for entry and exit;
- Inadequate ventilation; and
- Is not designed for continuous worker occupancy



### HSE req. 005 Confined (enclosed) space work

- 1) Confined space work should be avoided, if possible
- 2) Task Risk Assessment (TRA) and rescue plan should be provided for each confined space work, covering all hazards influencing the activities
- 3) Confined space work on board vessels shall be covered by Permit to Work (PTW), signed by the Master
- 4) Procedures shall be provided, including details on appointment of a responsible person, authorised gas tester, training requirements for the personnel carrying out the work, isolation of equipment, cleaning before entry, ventilation, testing of air quality, preparing emergency arrangements, etc.
- 5) Conduct Toolbox Talk (TBT)/Take2 before work starts



## 2.6 Lifting operations

Lifting operations involves risks related to personnel hit by dropped load, personnel hit by objects falling from loads, crushing by swinging loads and material damages.

Possible failures may include cranes or lifting gear breakage, incorrect use of shackles or slings, items left on load before lifting, operator errors/lack of training, communication errors/misunderstandings, or insufficient physical barriers.



### HSE req. 006 Lifting operations

- 1) All personnel involved in lifting operations shall be qualified, competent, and fit for duty
- 2) Cranes and lifting equipment shall be certified, maintained and operated in accordance with applicable laws, rules, regulations, and client's requirements
- 3) Risk Assessment shall be provided prior to all lifting operations
- 4) Heavy lifts (>50 tons) and non-standard lifts require approved Lift Plans
- 5) Heavy lifts (>50 tons) and non-standard lifts on vessels require Permit to Work (PTW)
- 6) Lifting equipment shall as a minimum be inspected and re-certified by a competent person or authority annually, if not otherwise specified by local and national regulations
- 7) Equipment used for lifting or securing personnel shall be inspected and re-certified by a competent person or authority every sixth month
- 8) Lifting equipment shall be colour coded in accordance with local scheme
- 9) Special precautions shall be made to ensure:
  - That weather conditions are within the defined safety margins
  - That there is sufficient lighting in the lifting area
  - Good radio communications and procedures
  - That shackles for lifting are 4-part type (body, bolt, nut, locking pin). Cotter pins shall be used on all permanent lifting arrangements, locking clips may be used on temporary lifting arrangements
  - bolts are equipped with cotter pins or equivalent
  - That lifting equipment and lifting points have Safe Working Load (SWL) clearly marked on it
  - That suitable storage is provided for lifting equipment to prevent physical damage or deterioration
- 10) Red/white no-access barriers shall be established around the lifting zone(s)
- 11) The Lift Supervisor holds the responsibility of coordinating the lift with the crane operator, and shall be able to communicate clearly to the crane operator and banksmen during all sequences of the lift
- 12) Conduct Toolbox Talk (TBT)/Take2 before work starts





## 2.7 Hot works

'Hot works' includes welding, burning, flame cutting, metal grinding, heat shrinking, or other operations causing high temperatures.

Hot works includes health hazards related to burns, respiration of toxic gases, noise and injuries from flying particles and sparks.

Further, hot works is a common cause for fires.



### HSE req. 007 Hot works

When conducting hot works, the following safety rules apply:

- 1) The hot work shall be covered by Risk Assessment (RA) or Task Risk Assessment (TRA)
- 2) Offshore: Permit to Work (PTW) is required. Special PTW is required for Hazard Zones
- 3) Hot works in confined (enclosed) space shall follow local procedure
- 4) Acetylene and oxygen gas bottles (for work on vessels):
  - a. Acetylene and oxygen bottles shall be placed at safe distance from grinding, welding, or flame cutting work
  - b. Acetylene and oxygen bottles shall be placed minimum 6 m apart
  - c. Bottles brought on deck shall be placed by the deck railing within reach of a crane
  - d. Bottles/bottle racks shall be prepared with lifting arrangement (chains or wires) for rapid hoisting into water
  - e. The area around the bottles shall be fenced off
  - f. The amount of gas on deck should be limited to a minimum. Gas bottles not in use shall be back-loaded to quayside as soon as possible
- 5) Hose connections:
  - a. Flashback arrester shall always be used
  - b. A person deemed competent shall fit the flashback arresters to the gas bottles
  - c. The hose shall be secured to the bottle or bottle rack
  - d. The operator shall check the whole length of the hose for damages before use, and check that hose clamps are present and correctly tightened
  - e. When connecting the hose to the gas bottle, a leakage test shall be conducted using leak test spray

Cont...





### **HSE req. 007 Hot works (cont.)**

- 6) Fire prevention:
  - a. Fire extinguishers shall be easily accessible at the work site. As a norm, each person conducting hot work should have a fire extinguisher within 2 m reach
  - b. Fire hoses shall be taken out of their cabinets, connected, and prepared for immediate use. All persons at the work site shall be made aware of where the fire hoses are and how to use them
  - c. If there is a risk of sparks or flames reaching combustible objects, these shall be covered with fire retardant material (welding mat or similar)
  - d. A fire watch shall be appointed at the work site. Additional fire watch(es) shall be appointed if it is not possible to overlook the site by one person
  - e. For vessels: If hot works on steel plate may result in heat build-up on the opposite side of the plate, fire watch shall be put out there, e.g. under deck, in adjacent rooms, etc.
  - f. When working in enclosed spaces e.g. in tanks, foundations, etc., consider oxygen depletion and the presence or formation of combustible gases before and during the work
- 7) Cordon off the work area with yellow/black hazard zone barriers
- 8) Welding or cutting is not permitted in or near rooms containing flammable or combustible liquids, vapours, or combustible dusts. Ensure that the area is well ventilated. If possible, relocate the work from the work site to a safe place, e.g. to a work shop
- 9) Only use approved equipment in good condition and follow the manufacturer's instructions
- 10) All personnel involved in any type of hot works shall be competent and have received the appropriate training
- 11) Conduct Toolbox Talk (TBT)/Take2 before work starts

## 2.8 Use of Mobile Elevated Work Platforms (MEWP)

Mobile Elevated Work Platforms (MEWPs) are scissor lifts, boom lifts, cherry pickers that may be in use to enable access at heights.

They may be used both onshore and offshore. The use of MEWPs involve considerable risks:

- MEWP tipping over
- Personnel crushed against roof or structures
- MEWPs hitting structures
- Personnel falling from MEWP
- Technical failure
- Operator failures

As MEWPs are one-barrier devices, their use shall be minimized as much as possible, and only if other safer means of access is not available.



### HSE req. 008 Use of MEWPs

When using MEWPs the following safety rules shall be implemented:

- 1) The MEWP shall be certified, maintained and in full working order
- 2) The MEWP operator(s) shall have documented theoretical and practical competence in the use of lifting devices, and have adequate familiarisation training in use, maintenance and inspection of the specific MEWP, and applicable regulations
- 3) Prior to start using the MEWP, the emergency override system shall be tested. One dedicated and trained person shall be on the ground, prepared to operate the emergency override system. Procedures shall be established and trained at sufficient intervals
- 4) Risk Assessment or Task Risk Assessment shall be completed prior to start of work. On board vessels, PTW shall be provided
- 5) Climbing out of the MEWP basket is not allowed
- 6) Banksman shall be present when the MEWP is moved on site or on deck
- 7) In addition to standard PPE (see requirement 002), the following shall be used:
  - a. Each person in the MEWP basket shall wear safety harness and shall be attached, individually, by lanyard to the basket
  - b. When working over water, immersion suit (independent of water temperature), life jacket and Personal Locator Beacon (PLB), and decision to require personnel to be secured to the basket should be used, subject to risk assessment
- 8) Conduct Toolbox Talk (TBT)/Take2 before work starts

## 2.9 Use of telehandlers, forklifts and mobile cranes

Telehandlers (telescopic handlers) forklifts, and mobile cranes are used at onshore sites, on board vessels and at fabrication sites for various purposes.

The use of telehandlers, forklifts and mobile cranes involves considerable risks:

- Machine tipping over or hitting structures during movement
- Machine tipping over during lifting
- Personnel crushed between the machine and structures
- Dropped load
- Traffic accidents



### HSE req. 009 Use of telehandlers, forklifts and mobile cranes

When using telehandlers, forklifts and mobile cranes the following safety rules shall be implemented:

- 1) The equipment shall be certified, maintained and in full working order
- 2) The operator(s) shall have documented theoretical and practical competence in the use of lifting devices, and have adequate familiarisation training in use, maintenance and inspection of the specific machine, and the applicable regulations
- 3) Risk Assessment or Task Risk Assessment shall be completed prior to start of work. On board vessels, PTW shall be provided
- 4) Banksman shall be present when the equipment is moved on site or on deck
- 5) When a man-basket is fitted to the machine, the requirements for use of MEWPs apply
- 6) Prior to arriving at the lift site: Check to ensure the ground have adequate strength to support the weight of both the machine and the load throughout the lift. Then position the machine to allow to place or retrieve the load without moving or repositioning it
- 7) Prior to lifting and placing/retrieving materials at heights: Study and apply load charts carefully. Do not exceed maximum capacity within each respective load range, utilize the load chart to make sure the machine is within range to place or retrieve a load consistent with the weight of the load and distance required. Use outriggers if needed
- 8) When operating telehandler, the following safety rules shall be observed:
  - a. Park the telehandler on a level surface, or level out the machine (if applicable). The boom and attachment shall not be raised unless the telehandler is level
  - b. Prior to using a telehandler for moving materials, assess conditions around the work site and identify any obstacles, obstructions or personnel
  - c. Before picking up a load for transport, make sure to have the correct carriage and forks for the material being handled, and for the worksite conditions
- 9) Conduct Toolbox Talk (TBT)/Take2 before work starts



## 2.10 Use of portable generators

Portable generators are internal combustion engines used to generate electricity.

Hazards related to use of generators are:

- Shocks and electrocution from improper use of power or accidentally energising other electrical systems
- Fires from improperly refueling a generator or inappropriately storing the fuel for a generator
- Noise and vibration
- Carbon monoxide (CO) poisoning



### HSE req. 010 Use of portable generators

When using portable generators the following safety rules shall be implemented:

- 1) Preventing electrical shock and electrocution:
  - Make sure the generator is properly grounded and that the grounding connections are tight
  - Never use frayed or damaged extension cords
  - Keep the generator dry, do not use it in the rain or wet conditions. If needed, protect a generator with a canopy. Never manipulate a generator's electrical components if you are wet or standing in water
  - Do not use electrical equipment that has been submerged in water. Equipment shall be thoroughly dried out and properly evaluated before using. Power off and do not use any electrical equipment that has strange odours or begins smoking
- 2) Preventing fire:
  - Before refuelling, shut down the generator and allow it to cool. On vessels: Follow local refuelling procedure
  - Gasoline and other generator fuels should be stored in a vented place and transported in approved containers that are properly designed and marked
  - Keep fuel containers away from flame producing and heat generating devices
- 3) Preventing noise and vibration hazards:
  - Generator engines vibrate and create noise. Excessive noise and vibration could cause hearing loss and fatigue that may be a health hazard
- 4) Preventing carbon monoxide (CO) poisoning:
  - Never use a generator indoors or in enclosed spaces such as garages, crawl spaces or basements. NOTE: Open windows and doors may not prevent CO from building up when a generator is located in an enclosed space
  - Make sure a generator has clear space on all sides and above it to ensure adequate ventilation
  - If you or others show symptoms of CO poisoning—dizziness, headaches, nausea, tiredness — get to fresh air immediately and seek medical attention. Do not re-enter the area until it is determined to be safe by trained and properly equipped personnel
- 5) Conduct Toolbox Talk (TBT)/Take2 before work starts



## 2.11 Use of man-baskets

By its nature, a man-riding crane device is a one-barrier solution, and involves considerable risks.

Crane failure or operator failure may lead to fatal accidents. Uncontrolled swinging may lead to severe crushing injuries.

In order to reduce risks for accidents and incidents it is the general policy that man-basket operations are to be avoided.



### HSE req. 011 Use of man-baskets

- 1) Man-baskets shall only be used when scaffolding, ladders, mobile elevated work platforms (cherry pickers/scissor lifts), or other conventional means of access are more hazardous or not possible because of structural design or worksite conditions. Employee safety, not convenience, shall determine which method is to be used
- 2) Man-basket may be used for emergency evacuation of injured persons. In such cases a special padded basket prepared for stretchers ('Frog') should be used
- 3) Man-baskets shall not be used for personnel transfer
- 4) On vessels, man-basket operations requires a Special PTW to be approved by the Master. For onshore sites man-basket operations requires approval from Local Manager
- 5) The man-basket, crane, and lifting accessories shall be designed for purpose, certified, maintained and operated in accordance with the equipment's user manuals and applicable rules and regulations
- 6) In addition to standard PPE (see HSE req.t 002), the following shall be used:
  - a. Each person in the man-basket shall wear safety harness and shall be attached, individually, by lanyard or inertia reel directly to the crane hook above
  - b. When working over water, immersion suit (independent of water temperature), life jacket and Personal Locator Beacon (PLB) shall be used
- 7) Environmental requirements:
  - a. Max 8 m/s (for UK: 7 m/s). The wind speed shall be measured with the crane at max elevation of the lifting path of the man-basket
  - b. Waves: Max 2 m Hs. Sea conditions shall allow for safe launch and retrieval of Man Over Board (MOB) boat
  - c. Visibility: Full visibility in the whole lift area
  - d. Light conditions: Daylight, or in darkness if the area has sufficient artificial lighting. Man-basket operations over water in darkness is not allowed
- 8) Personnel in the man-basket shall bring equipment to enable emergency rescue
- 9) Before hoisting personnel, a trial lift with load equal to man-basket SWL shall be conducted. The Crane Operator shall move the unmanned man-basket through all anticipated crane movements and basket path during the trial lift
- 10) Conduct Toolbox Talk (TBT)/Take2 before work starts



## 2.12 Chemicals handling

Almost all work involves handling various chemical products, e.g., oil, grease, cleaner, lubricants, paint, glue etc.

Many of these products may be hazardous to health. Some are having the potential of causing eczema and allergic reactions upon repeated skin contact. Other products are hazardous to the health when breathing the fumes, or are incompatible when mixed. Some products have no immediate symptoms and the effect of exposure may be evident after time has passed.

### HSE req. 012 Chemicals handling

Precautions and use of PPE:

- 1) The policy for the use of chemicals shall follow the Substitution Principle (environmental or hazardous chemicals shall be replaced with less hazardous ones, if possible)
- 2) The policy for the use of chemicals shall follow the Caution Principle (uncertainty shall not prevent measures, when there is a potential health risk or risk of environmental impact)
- 3) Risk assessment shall be conducted prior to using a chemical - reference to Safety Data Sheet (SDS)
- 4) Personnel may not purchase chemical products without first receiving approval from the Local Manager or Master on board vessels
- 5) If the product is harmful to inhale, appropriate PPE shall be used and ventilation/exhaust or draughts shall be established in accordance with the instructions in the SDS
- 6) Protective gloves shall be used in accordance with the instructions on the SDS
- 7) Eye protection shall always be used when handling chemicals (safety glasses, goggles, face shield subject to risk assessment)
- 8) Eye wash shall be ready available where chemicals are stored and used
- 9) Personnel with assigned medical duties shall receive information regarding poisonous and other harmful effects and shall be qualified to give first aid if possible injuries or poisonings occur

Storage and transportation:

- 10) Chemicals shall be stored in marked original or special containers. Storing chemicals in drinking bottles or food containers is not allowed
- 11) Chemical storage facilities shall be well ventilated, marked with signs, and possible to lock
- 12) Arrangements shall be made for spill collection where chemicals are used and stored
- 13) Chemicals shall be stored well protected against fire
- 14) Transportation shall be conducted in accordance with applicable rules and regulations

Disposal:

- 15) Chemical residues and clothes with oil or grease shall be disposed of as hazardous waste

Conduct Toolbox Talk (TBT)/Take2 before work starts



Safety Data Sheet (SDS) is made for each individual chemical product, and contains structured information about the hazards.

They also provide information about first aid, handling, disposal, and the specific PPE required.



#### HSE req. 013 Safety Data Sheets

- 1) SDS shall be available for all chemical products used at a site or on board a vessel
- 2) SDS shall be well organized, indexed, updated, and made easy accessible for the user
- 3) SDS shall be available in printed copy at the storage point
- 4) SDS shall as a minimum be available in English

## 2.13 Noise

Damage to hearing can occur when exposed to constant noise > 80 dB or impact noise >130 dB.

Exposure to high levels of noise can cause permanent hearing loss. Neither surgery nor a hearing aid can help correct this type of hearing loss. Short term exposure to loud noise can also cause a temporary change in hearing (your ears may feel stuffed up) or ringing in your ears (tinnitus). Repeated exposures to loud noise can lead to permanent tinnitus and/or hearing loss.



#### HSE req. 014 Noise

- 1) Areas where the noise levels exceed 80 dB shall be marked with warning sign(s)
- 2) Ear protection (plugs, muffs) shall be worn when the noise is > 80 dB or if there is a risk for impact noise of > 130 dB, or if the noise level is suspected to be above these limits
- 3) The work site or the vessel shall conduct measurements of noise levels



## 2.14 Electrical work

The effect of an electrical shock depends on the voltage and the resistance of the path if it follows through the body. For one second contact, the symptoms are:

- 5 mA - 1 V: Threshold of feeling, tingling sensation, max harmless current
- 10-20 mA - 10 V\*: 'Cannot let go' current, sustained muscular contraction
- 100-300 mA - 100 V\*: Ventricular fibrillation, fatal if continued

\*The amount of voltage needed to produce the current is highly dependent on the body resistance.



### HSE req. 015 Electrical work

The following rules apply to electrical work on live or potentially live electrical installations that may involve hazards to person performing the job:

- 1) Electrical work shall only be performed by approved/certified personnel responsible for ensuring that any electrical system is installed to a suitable standard
- 2) Risk Assessment or Task Risk Assessment shall be provided prior to high voltage electrical work. On board a vessel a PTW shall be issued
- 3) Before work begins, if possible, the electrical equipment shall be disconnected, protected from reclosing. Lock-Out-Tag-Out (LOTO) or Isolation Confirmation Certificate (ICC) procedure shall be implemented
- 4) The following additional PPE shall be worn during electrical work where there is a risk for electrocution:
  - Approved special isolated gloves
  - Isolated safety footwear
  - Safety glasses
- 5) Isolation mats shall be used for high voltage work
- 6) Electrical equipment for use on deck or for use outside (i.e., cable connections, portable and temporary installed lights, temporary junction boxes, portable power distribution boxes, etc.), shall be protected against potential water ingress. Connectors shall be IP44 class as a minimum. If it is not possible or practicable to avoid potential for water ingress, IP67 connectors shall be used. Vessels: All containers connected to power shall have earth direct to deck
- 7) Conduct Toolbox Talk (TBT)/Take2 before work starts





## 2.15 Environmental

Meeting the objectives for 'zero pollution' means establishing and implementing a system for handling waste, and measures to eliminate risks for unintentional spills to sea or ground.



### HSE req. 016 Waste management

#### Vessels:

A waste handling system shall be implemented in accordance with MARPOL requirements concerning handling of waste and hazardous waste.

#### Onshore sites:

Waste onshore shall be collected in adequate labelled bins or containers. Hazardous waste shall be stored with spill containment to ensure that contamination of surface or air is avoided.

Only a local approved waste management company is to dispose of the waste produced on site.

Waste shall be separated at least in two categories:

- 1) Combustible/flammable waste
- 2) Other hazardous waste

Burning of waste or other materials is forbidden.



WTG installation operations are conducted in sensitive environmental areas on land and at sea with strict applicable laws, rules, and regulations to prevent pollution.

'Environmental spills' in this context are unintentional spill/discharge to sea or ground and emission to air.

#### **HSE req. 017 Environmental spills to sea or ground**

- 1) Risk Assessment (RA) or Task Risk Assessment (TRA) shall be provided for work or use of equipment that may result in spills
- 2) All necessary actions shall be implemented to reduce the risks for spills. Before beginning any work with chemicals, the ground surface shall be protected by a layer of absorbent material, a spill tray or other sufficient protection (e.g. deck drain system)
- 3) Drums and canisters containing fuel, oil or other chemicals should be protected to by two barriers to prevent spillage, e.g., with double skinned fuel cells. Single skinned canisters/fuel cells shall be stored in a bonded/sealed reservoir with the capacity of holding 110% of the stored substances. Vessels shall be equipped with sufficient oil spill kits according to MARPOL requirements
- 4) All environmental spills shall be reported to the vessel Master, or Local Manager at onshore sites, regardless of type of substance
- 5) Material and equipment shall be secured from falling into sea. Objects dropped to the sea bed shall be reported to the Master
- 6) The Master is responsible for reporting spills to relevant authorities in accordance with MARPOL regulations
- 7) Conduct Toolbox Talk (TBT)/Take2 before work starts



## 2.16 Travel

Travelling means exposure to number of risks, e.g. to terrorism, crime, health, civil unrest or political tension, unfamiliar laws and regulations, natural disasters, etc.

Air, bus and train is by far the safest ways of transport (0,05 to 0.6 fatalities per billion km). Travel by car, bicycles, by foot or motorcycle is considerably less safe.

Although many of the travel risks are objective, most unwanted situations are in some way or another influenced by own decisions or actions.



### HSE req. 018 Travel

During travel, the following safety rules should be observed:

- 1) Before leaving:
  - a. Inform your relatives/friends about your travel (copy of detailed itinerary)
  - b. Keep photocopies of your passport, tickets, credit cards with you in a separate location from the originals. Carry a ID and the list with next-of-kin's information
  - c. Only travel with a small amount of cash
- 2) During travel:
  - a. Travel with companions if possible
  - b. Avoid trouble rather than confront it
  - c. Be wary of very friendly strangers, especially those who display great interest in your personal life or work schedule. Don't be flashy, keep a low profile
- 3) Airports:
  - a. Do not leave bags unattended. Check in luggage as soon as possible and remain within the security area.
  - d. Keep time spent in an airport to a minimum
- 4) Travel by taxi:
  - a. Do not use unlicensed taxis
  - b. Memorize or write down the number of the taxi
  - c. Check that the photo on display/ID is the same as the driver
  - d. Have the address of your destination written out in the local language and carry it with you
  - e. Do not ride with people soliciting taxi passengers in the terminal
  - f. If there is no meter, or if it the meter is inoperable, negotiate a fixed prices before departing
- 5) Travel by bus, train, subways:
  - a. Stay on your guard against pickpockets and paltry thieves in public places
  - b. On subways choose a middle car but never an empty car
  - c. On buses, sit in an aisle seat near the driver



## 2.17 Company vehicles and rental cars

Driving or being passenger in a vehicle represents one of the highest work related safety concerns.

Although driving means exposure to potentially hazardous traffic situations generated by others, each person own behaviour greatly influences the risk picture. A good safety culture and defensive driving attitude reduce the risk of accidents significantly.



### HSE req. 019 Company vehicles and rental cars

When using rental cars or company vehicles, the following safety rules should be observed:

- 1) Check of the vehicle prior to use:
  - a. Visual inspection of inside and outside. Document damages (e.g., by photo)
  - b. Is electrical system fully functional (door mechanism, windows, lights etc.)
  - c. Tires, are they in good condition?
  - d. Fuel – verify type of fuel (diesel or gasoline) and refuel if necessary before start
- 2) Use of mobile phones when driving:
  - a. Only use hands-free device
  - b. Suspend conversations in hazardous driving conditions or situations
  - c. Do not take notes or look up phone numbers while driving
  - d. Dial sensibly and assess the traffic
  - e. Do not engage in stressful or emotional conversations that may be distracting
- 3) Speeding:
  - a. Speed limit shall always be kept, and driving shall be done taken weather and road condition into consideration
  - b. Speeding ticket will be charge directly to the driver
- 4) The following should be in order before rental vehicle is returned:
  - a. Full tank of fuel
  - b. After hours drop-off: Take photos to prove that no damages has occurred
- 5) Damages:
  - a. It is the driver who is responsible to report any damages or incident to their line manager and Project Manager the same working day the incident occurs
  - b. The following details should be obtained from the scene and any involved third party:
    - Date, time, location, weather conditions, traffic conditions, road marking/signs/signals/vehicles involved ( car model etc.)
    - Drawings of the situation, placement of all vehicles involved
    - Witnesses contact details
    - Contact to police, (copy of police report)
    - Full description of the damages
    - Damages charges / costs
  - c. Any damage repairs arising from poor driving or abuse of the vehicle will be charged directly to the named driver of the vehicle
  - d. In case of multiple registered drivers the cost will be divided equally between the drivers and charged accordingly



### 3 Offshore specific HSE requirements

This chapter lists HSE requirements specific to offshore operations.

#### 3.1 Permit to Work (PTW) system

A permit to work (PTW) system serves two main purposes:

- Coordination of simultaneous operations (SIMOPS) to handle potential conflicts and interfaces between on-going work
- To ensure that activities are prepared and properly risk assessed prior to starting hazardous work

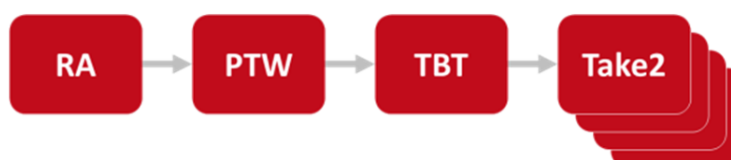
All vessels have established and implemented detailed procedures for PTW, covering requirements for risk assessments, types of work needing PTW or not, and detailed work procedure.

PTW system may also be used for hazardous work on load-out sites and for work in wind turbine generators (WTGs).

#### HSE req. 020 Permit to Work (PTW) system

- 1) Responsibility and authority to issue PTWs:
  - a. Work on board the vessel: Master
  - b. For work on offshore wind components (WTGs, met masts, foundations, transition pieces etc.): Offshore Construction Manager (OCM) or equivalent
  - c. Onshore work: Site Manager
- 2) A PTW shall as a minimum include:
  - a. Specification of work, including location, description of work and responsible person/person in charge
  - b. Validity
  - c. Risk assessment
  - d. Risk treatment
  - e. Authorisation (approval signatures)
  - f. Completion (sign-out)

Risk Assessment (RA), PTW (when needed), Toolbox Talk (TBT) and 'Take2' last minute risk assessment are the four basic safety tools:

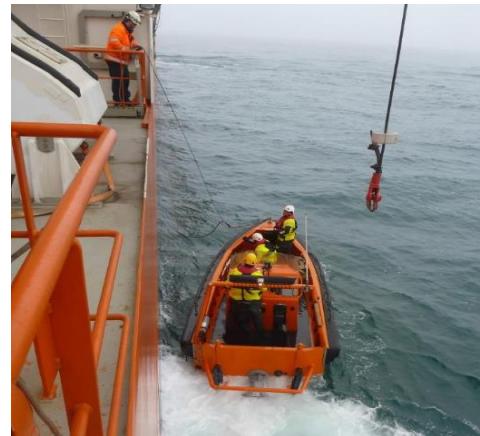




### 3.2 Use of FRC, RIBs, and small boats

Fast Rescue Craft (FRC), Rigid Inflatable Boat (RIBs) or small boats (e.g., rubber boats) may be used for access to turbine foundations or to conduct tasks away from the vessel.

The vessels have established and implemented procedures for use of FRC, RIBs and small boats.



#### HSE req. 021 Use of FRC, RIBs, and small boats

The following specific requirements apply:

- 1) Risk Assessment (RA) or Task Risk Assessment (TRA) shall be provided prior to the use of FRCs, RIBs and small boats
- 2) A second standby boat or other vessel shall be available for rescue. The vessel's MOB Boat shall be prepared and ready for operations. It shall be possible to have it launched and seaborne in less than 10 minutes
- 3) FRC, RIBs, and small boats shall always be manned by minimum two persons
- 4) Radio communications shall be ensured between the mother ship and the FRC, RIBs or small boat
- 5) In addition to standard PPE (see HSE req 002), the following shall be used:
  - a) Immersion suits (regardless of water temperature)
  - b) Life jacket
  - c) Personal Locator Beacon (PLB)
- 6) FRCs, RIBs, and small boats shall be equipped with rescue equipment in accordance with applicable SOLAS requirements, as a minimum with drinking water, flashlight, torch, emergency signalling materials and ropes
- 7) Conduct Toolbox Talk (TBT)/Take2 before work starts



### 3.3 Personnel transfer offshore

Personnel transfer offshore is normally conducted by using either the vessel's Hydraulic Boat Landing or the Transition Piece (TP) boat landing.

Climbing boat landings includes hazards related to slips/trips/falls, fall from height, dropped objects, crushing/squeezing, hypothermia, and drowning. However, when procedures are followed rigorously, it is a safe way to transfer personnel.

It is critical that all personnel are trained and fully aware of the procedures to be used for the specific boat landing and Crew Transfer Vessel (CTV) to be used.



#### HSE req. 022 Personnel transfer with man-basket or pilot ladder

- 1) Man-baskets shall not be used for personnel transfer
- 2) Pilot ladder may be used by pilots, but shall not be used for transfer of other personnel

#### HSE req. 023 Personnel transfer via boat landing

- 1) During personnel transfer via Hydraulic Boat Landing or via TP, minimum one rescue person shall be on standby for assisting transferring personnel
- 2) Environmental requirements:
  - a. Wind and waves: Max 1.8 m Hs (other limit specified by the wind farm may apply)
  - b. Visibility: Full visibility in the whole area around the CTV
  - c. Light conditions: Daylight, or in darkness if the area has sufficient artificial lighting
- 3) A Man Over Board (MOB) boat shall be operational and ready for launch. It shall be possible to have it seaborne in less than 10 minutes
- 4) When climbing the boat landing ladder, no extra weight/bags/backpacks shall be carried
- 2) In addition to standard PPE (see requirement 002), the following shall be used:
  - a. Immersion suits (exemption: not required in daylight when water temperature is above 12°C. Other limits specified by the Wind Farm may apply)
  - b. Life jacket
  - c. Personal Locator Beacon (PLB)
  - d. Safety harness
  - e. Inertia reel (yoyo), alternatively two safety lanyards w/hooks
- 5) Training requirements:
  - a. Transferring personnel shall have in-date 'GWO Sea Survival' or 'RUK Marine Safety Training – vessel-to-vessel transfer' certificate, as a minimum.
  - b. Marine crew: Instead of 'GWO Sea Survival', STCW Basic Training is approved
  - c. Rescue personnel shall have in-date 'GWO Working at Heights' or 'RUK Working at Heights' certificate, as a minimum
- 6) Conduct Toolbox Talk (TBT)/Take2 before work starts





### 3.4 Helicopter operations

When using helicopters for crew transfer, the highest standards should be employed to ensure safety for our personnel.

Helicopters should be equipped and operated for extended overwater flights with floating gear, two manual releasable life rafts, emergency locator transmitter, individual pop-out evacuation hatches, PA system, rescue equipment, flight surveillance system, flight data monitoring system, ground proximity warning system, traffic avoidance system, etc.

Helicopter operators should only be amongst well recognised companies with extended experience from the offshore oil & gas or offshore wind business.



#### HSE req. 024 Personnel transfer with helicopter

When conducting personnel transfer with helicopter, the following requirements shall be met:

- 1) Helicopters used for personnel transfer under FOM/FOWIC responsibility shall:
  - a. Be equipped and operated for commercial overwater air traffic in accordance with 'European Aviation Safety Agency (EASA) – Part CAT' and in line with '066 Norwegian Oil and Gas Recommended guidelines for flights to petroleum installations'
  - b. Be of 'Performance Class 1' or 'Performance Class 2 Enhanced' typeHelicopters not meeting these requirements cannot be used without explicit approval from Managing Director
- 2) Personnel transfer flights for FOM/FOWIC personnel shall only take place in daylight
- 3) Helicopter operations, other than in emergencies, shall not be conducted if the environmental conditions exceed WMO Sea State Code 6
- 4) Only persons with valid Helicopter Underwater Egress Training (HUET) certificates may take part in personnel transfer with helicopter. For UK: CA-EBS certificate is required
- 5) The following PPE shall be used:
  - a. Immersion suit (compulsory 3 layer winter, 2 layer summer under the suit)
  - b. Emergency Breathing Device (UK: CA-EBS type)
  - c. Life jacket
  - d. Personal Locator Beacon (PLB)
  - e. Hearing protection
- 6) Applicable vessel, offshore wind farm and helicopter company procedures shall be followed
- 7) Helicopter transit shall be directly from shore-to-ship and from ship-to-shore ('No hopping')
- 8) Conduct Toolbox Talk (TBT) in the form of helicopter safety brief/Take2 before flight





### 3.5 Personnel movement on/off Brave Tern and Bold Tern

For security reasons, and for ensuring efficient on-signing/off-signing, the vessel needs to be informed in due time of all visitors.

#### HSE req. 025 Personnel movement on/off Brave Tern and Bold Tern

Prior to joining Brave Tern or Bold Tern:

- 1) Minimum 48 hours before joining, all visitors shall notify the vessel of their arrival with:
  - a. Name
  - b. Role
  - c. Company
  - d. Vessel name
  - e. Purpose of visit
  - f. Estimated time of arrival at vessel
  - g. Estimated time of sign-off from vessel
  - h. Need for accommodation (cabin)

Sub-contractors and client personnel (SPS Crew) shall send the request to

[brt.visitor@windcarrier.com](mailto:brt.visitor@windcarrier.com) or [bot.visitor@windcarrier.com](mailto:bot.visitor@windcarrier.com).

FOWIC and FOM personnel shall request for visit to [admin@bot.foms.no](mailto:admin@bot.foms.no) or

[admin@brt.foms.no](mailto:admin@brt.foms.no). Personnel that shall sleep on board the vessel (and have not been on board for the last six months) shall submit 'Personal Details Form' ('NOK form') together with the arrival notification

- 2) Personnel that shall work offshore shall in addition submit copies of their relevant certificates, as a minimum:
  - a. Medical certificate
  - b. GWO/RUK Sea Survival certificate
  - c. HUET certificate
- 3) The vessel will record the personnel data, allocate cabin (if applicable), and send confirmation back to the requester

When arriving at the vessel:

- 1) If in port, report to the gangway watch (documentation of ID to be requested)
- 2) Proceed to the Bridge for registration, issuing of Vessel ID card, and receiving induction (if needed). Personnel working offshore shall present original passport to the Bridge upon arrival

When signing off the vessel:

- 1) Notify vessel of any changes to planned departure date as soon as possible
- 2) Hand in vessel ID card



### 3.6 Diving

Normally, diving operations will not be part of WTG or foundation installation work. However, in emergency situations or if there is a need to conduct tasks not possible to be conducted with ROVs, divers may be used.

#### HSE req. 026 Diving operations

Divers should not be used as part of planned work. If there nevertheless is a need for diving operations, the following requirements apply:

- 1) A Diving Plan and Diving Risk Assessment shall be produced
- 2) The name of competent person and specific responsibilities shall be documented
- 3) The diving work shall be conducted in compliance with the following documents:
  - a. Code of Practices for Offshore Diving (IMCA D014)
  - b. Code of Practices on the initial and periodic examination (IMCA D018)
  - c. Design for surface oriented diving systems (IMCA D023)
  - d. Diving where there is poor visibility (AODC 034)
  - e. Effects of underwater currents on divers (AODC 047)
  - f. Diving at work regulation, Commercial diving projects offshore (ACOP 1997 L103) (UK)
  - g. Other applicable laws, rules and regulations
- 4) All diving work offshore shall be approved by the offshore wind farm
- 5) Conduct Toolbox Talk (TBT)/Take2 before work starts

### 3.7 Remotely Operated Vehicles (ROV)

Submersible Remotely Operated Vehicles (ROV) may be used for work subsea or for inspection.

#### HSE req. 027 ROV operations

When using ROV the following shall be taken into account:

- 1) The operation should be conducted in accordance with:
  - a. Code of practice for the safe and efficient operation of ROVs (IMCA R004)
  - b. High voltage equipment – Safety procedures for working on ROVs (IMCA R005)
  - c. Guidelines for installing ROV Systems on vessels or platforms (IMCA R018)
- 2) ROV maintenance records shall be kept
- 3) If unplanned ROV work takes place, Risk Assessment or Task Risk Assessment shall be produced and submitted to the offshore wind farm (if not otherwise stated)
- 4) Subject to HSE bridging, the offshore wind farm shall issue a work permit before ROV work is started
- 5) Conduct Toolbox Talk (TBT)/Take2 before work starts



## 4 HSE management requirements

In this context, 'HSE management' covers meeting structure, language, management system certifications, audits and inspections, and safety delegates.

### 4.1 Shift hand-over meetings

This paragraph describes the regular and ad-hoc meetings related to safety during normal installation and service work. In periods of low intensity for the installation crew, i.e. offshore during transit and Waiting-on-Weather (WOW) periods, meetings will be held when needed.

'Shift hand-over meetings' are held between managers of the previous and oncoming shift to exchange information related to the work.

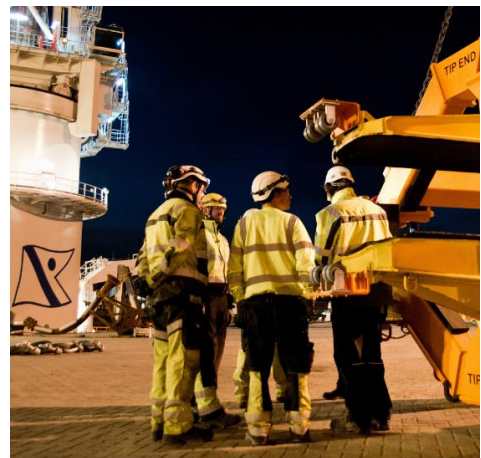
#### HSE req. 028 Shift hand-over Meetings

The shift leaders/supervisors/managers shall conduct a short, to-the-point meeting to exchange information on progress and planned tasks for the next shift. Safety issues shall be covered as needed.

### 4.2 Toolbox Talks

Toolbox Talks (TBT) are job specific meetings covering health and safety regarding forthcoming work.

TBT is normally a brief meeting with all personnel participation in the work to discuss potential hazards and safety issues and to ensure that everyone know what they are supposed to be doing.



#### HSE req. 029 Toolbox Talks

- 1) Toolbox Talks (TBT) shall as a minimum be conducted at the start of every shift or when needed prior to start of hazardous work during a shift
- 2) The TBT is mandatory for all personnel to participate in the work
- 3) If the work requires a PTW, TBT shall always be conducted prior to start of work
- 4) TBTs shall be recorded, as a minimum with date, time, name of person heading the meeting, and names of those that participated



### 4.3 Safety meetings

'Safety meetings', in this context, are plenary meetings to exchange information and review health and safety aspects. On board vessels, meetings with the maritime crew and project team members may be held separately.

#### **HSE req. 030 Safety Meetings**

- 1) Safety Meetings shall be held at weekly intervals and arranged so that personnel working shifts will attend every 14 days as a minimum. In low-intensity periods (e.g., off-hire) the interval may be increased
- 2) Safety meetings shall be recorded, as a minimum with date, time, name of person(s) heading the meeting and names of participants

### 4.4 Language

English is the corporate language in all Fred. Olsen related companies. If people speak or read limited English, extra care should be taken to ensure that they fully understand the message being delivered.

#### **HSE req. 031 Language**

The English language shall be used in all written material and formal correspondence and in radio communications.

### 4.5 Management system certifications

The following requirements apply to suppliers of goods and services and vessel management companies:

#### **HSE req. 032 Management system certification**

Subcontractors providing goods and services to FOO companies shall be ISO 9001 certified, or have established and implemented a management system in compliance with ISO 9001.



## 4.6 HSE Audits

Audits are systematic, independent, and documented processes for obtaining evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled. Audits are formal in its nature, and conducted in accordance with an audit plan.

### HSE req. 033 HSE Audits

- 1) The FOO company has the right to audit a subcontractor on project related processes and procedures
- 2) The FOO company has the right to participate in a 3<sup>rd</sup> party audit related to the work as an observer
- 3) On request, copies of previous relevant audit reports shall be provided
- 4) The subcontractor shall take corrective action on findings and keep the FOO company informed about the progress on these items

## 4.7 Safety inspections

Safety inspections are conducted to verify that the HSE management system is implemented on site or on board a vessel.

### HSE req. 034 Safety inspections

- 1) The FOO company has the right to conduct safety inspections on site
- 2) Safety inspections may be done with or without prior notice
- 3) The subcontractor shall take corrective action on findings and keep the FOO company informed about the progress on these items
- 4) The FOO company shall have the right to locate its representatives at fabrication facilities, on vessels and all other sites involved in the work

Before starting to work at a site, onshore or offshore, a site or vessel readiness review will be conducted to ensure that the facilities or vessels are safe for work. Site inspections are conducted to check that all necessary measures are in place, i.e. fire extinguishing equipment, waste handling system, lighting, signs, hazardous material storage, lifting arrangements, access control, emergency preparedness etc.

### HSE req. 035 Onshore work site and vessel readiness inspections

- 1) Prior to start of work at an onshore site a site readiness inspection should be conducted
- 2) Prior to start of work at a vessel, 3<sup>rd</sup> party documentation that the vessel complies with applicable laws, rules and regulations shall be provided



## 4.8 HSE incident reporting and investigation

This paragraph specifies requirements related to reporting of near misses, incidents and accidents.

Definitions:

- Incident: A generic term for all events to be reported according to the HSEQ system
- Accident: An event or chain of events which has caused injury, illness and/or damage (loss) to human, property and the environment or third parties
- Near miss: An event or chain of events that under slightly different circumstances could have resulted in an accident

Reporting is divided in three levels:

1. Accident Notification (pre-formatted email)
2. HSE Incident Report (form)
3. Investigation Report (document template)

The contracts will normally specify time requirements for notification of incidents. By default, the following time limits apply:

### HSE req. 036 Time limits for notification of incidents

As a general rule, incidents shall be reported as soon as possible. Time limits depend on the severity of the issue:

Consequence		Type of incident/accident			Time limit	
		Personnel injury	Environmental spill	Material damage	<1 hour (by phone)	<24 hours (by e-mail)
Very high	5	Fatality	> 1000 litres	> 1million €	x	x
High	4	Permanent disability case	100 - 1000 litres	500 000 - 1 million €	x	x
Medium	3	Lost time injury (LTI)	50 - 100 litres	100 000 - 500 000 €	x	x
Low	2	Medical treatment case	10 - 50 litres	10 000 - 100 000 €		x
Very low	1	First aid case	1 - 10 litres	0 - 10 000 €		x

For incidents with 'Medium' to 'Very high' severity, notification shall be given by phone and by sending 'Accident Notification'.

For 'Low' and 'Very low' consequence injuries, notification may be done by e-mail.



All incidents, accidents, and near misses are to be recorded in an HSE incident database. Incident reports will be transmitted to relevant client(s) as required per contract. In order to provide systematic reporting and statistics, key data about the incident is collected in an HSE Incident Report.

#### **HSE req. 037 HSE Incident Reports**

- 1) All incidents shall be recorded as an HSE Incident Report
- 2) The HSE Incident Report shall be sent within 24 hours after the incident occurred, and shall as a minimum include the following information:
  - a. Title
  - b. Type of incident
  - c. Actual severity
  - d. Potential severity
  - e. Company
  - f. Project
  - g. Reported by
  - h. WHO
  - i. WHEN
  - j. WHERE
  - k. WHAT
  - l. WHY
  - m. Recommended actions
- 3) Detailed reports, pictures, documents etc. should be attached to the report
- 4) A person's name shall not be listed in an HSE Incident Report. Role names are to be used instead, and any injured persons should be identified as 'IP'. Personal data of the IP shall be sent separately

Investigations are used in order to clarify what happened in detail, to find out why it happened (direct cause and root causes), and to recommend corrective and preventive measures to be taken.

#### **HSE req. 038 Investigations**

- 1) Incidents and near misses with potential consequence level 3 or higher should be investigated. The local manager or organisation responsible for the incident shall initiate and conduct the investigation in accordance with the FOO company's procedures
- 2) The investigation team shall consist of at least one person not directly involved in the incident, preferably a person holding an HSE role in the organisation
- 3) An investigation report shall be sent as soon as it is finalised, no later than seven days after the incident. If the investigation is delayed, a preliminary report shall be issued within seven days
- 4) A person's name shall not be listed in the investigation reports. Role names are to be used instead, and any injured persons should be identified as 'IP'
- 5) For major incidents and accidents, the FOO company should conduct the investigation with a team consisting of experienced investigation expertise and subject matter experts



## 4.9 Periodic HSE reporting

The contracts will specify the reports to be forwarded to a client, and the content and frequency may vary from project to project. The paragraph describes the HSE related content in standard reports to be issued to FOWIC.

### HSE req. 039 Daily progress reports (offshore only)

During offshore operations, including mobilisation and load-out, the project shall provide a daily progress report (DPR) with the following HSE related information as a minimum:

- 1) HSE incidents
- 2) Other issues related to safety

### HSE req. 040 Monthly report (all projects)

Each work site/project/vessel should issue a monthly HSE report, as a minimum including the following HSE related information:

- 1) HSE incidents (reference to submitted HSE Incident Reports):
  - a. Personnel incidents
  - b. Material damage incidents
  - c. Environmental incidents
  - d. Number of RIDDOR reportable incidents (UK)
  - e. Security violations
  - f. Work related illness
- 1) HSE statistics:
  - a. Number of Observation Cards
  - b. Number of Safety Meetings conducted
  - c. Audits conducted
  - d. HSE inspections conducted
- 2) Exposed hours:
  - a. Project team members
  - b. Vessel crew members

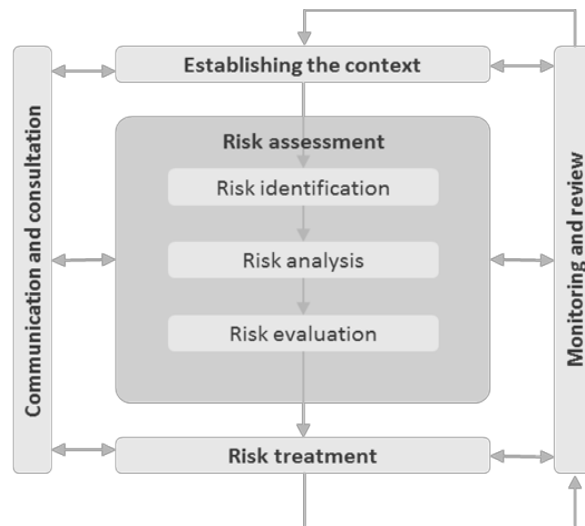




## 5 Risk management requirements

### 5.1 Risk Management approach

Risk management follows the principles in the ISO 31000 standard, and is an integrated part of all activities.



Procedures have been implemented for how to conduct risk management. Overall risk assessments have been made at the company levels, to be used as baseline for further risk assessment in projects and for other activities.

### 5.2 Risk Assessment, Task Risk Assessment and 'Take2'

Risk assessments include risk identification, risk analysis and risk evaluation in order to list actions to be taken in order to minimize, eliminate, reduce or mitigate risks.

Task Risk Assessments (TRA) may be used in situations with time constraints, an existing RA does not cover the work operation, a written procedure does not exist or cannot be followed, or for non-complex work operations that includes hazards.

To ensure that all risks are identified 'Take2' last minute risk assessment is conducted by the person or persons to conduct the work, at the work place, immediately prior to start of the work, covering 'What is the task?', 'What can go wrong?', 'How can we protect ourselves?', and 'Is it safe to start?'

#### HSE req. 041 Risk assessments

- 1) Risk assessments (RA) or Task Risk Assessment (TRA) shall be written prior to starting all work that includes hazards
- 2) Take2 last minute risk assessment should be conducted at the point-of-work before start of hazardous work



### 5.3 Risk criteria and risk factors

Risk criteria are terms of reference against which the significance of a risk is evaluated. In order to have a consistent and comparable risk assessments, common risk criteria and acceptance criteria should be used for all activities.

#### HSE req. 042 Common risk criteria

Consequence and likelihood shall be rated from 1 to 5, using these standardised criteria:

Severity		Consequence					Likelihood	
		Personnel Injury	Environmental spill to sea	Material damage	Revenue loss	Reputation loss	Mean time between each occurrence	Repetitions between each occurrence
Very High	5	Fatality	> 1000 litres	> 1 million €	> 5 million €	Neg. reputation with society and the public	< 1 month	< 5 <sup>th</sup> time
High	4	Permanent disability case	100 - 1000 litres	500 000 - 1 million €	1 million € - 5 million €	Neg. reputation throughout the industry	< 3 months	< 25 <sup>th</sup> time
Medium	3	Lost Time Injury	50 - 100 litres	100 000 - 500 000 €	500 000 € - 1 million €	Neg. reputation with key stakeholders	< 6 months	< 100 <sup>th</sup> time
Low	2	Medical treatment case	10 - 50 litres	10 000 - 100 000 €	100 000 € - 500 000 €	Neg. reputation with client's project mgmt.	< 2 years	< 500 <sup>th</sup> time
Very Low	1	First Aid case	1 - 10 litres	0 - 10 000 €	0 - 100 000 €	Neg. reputation with local client personnel	> 2 Years	< 1.000 <sup>th</sup> time



In order to visualise levels of the risks, colour codes may be used. In order to avoid confusion, the coding should be standardised.

#### HSE req. 043 Common risk acceptance criteria

Acceptance of risks are dependent on the degree of severity, expressed as the “risk factor”.

$$\text{Risk factor} = \text{Consequence} \times \text{likelihood}$$

The acceptance criteria in FOO are as follows:

- Risk factor 15-25 Red Stop, or do not start activity, reduce risk before continuing
- Risk factor 10-12 Orange Activity may be conducted, subject to approval from MD
- Risk factor 5-9 Yellow Activity may be conducted, take actions to further reduce risk
- Risk factor 1-4 Green Acceptable risk, monitor

The fact that a risk has been rated as “orange”, “yellow” or “green” does not automatically mean that it is acceptable. Colour codes in risk matrices or risk registers shall be used as guidelines only, and are not to be viewed as absolutes for taking or not taking actions. All risks shall be addressed on a case-to-case basis.

Risks may be presented in 5 x 5 matrices. The colouring of the cells in the matrix depicts the risk acceptance criteria.

Consequence	Very high	5	5	10	15	20	25
	High	4	4	8	12	16	20
	Med	3	3	6	9	12	15
	Low	2	2	4	6	8	10
	Very low	1	1	2	3	4	5
			1	2	3	4	5
			Very low	Low	Med	High	Very High
			Likelihood				



## 6 Training requirements

### 6.1 General training requirements

#### **HSE req. 044 General competence requirement**

All personnel shall be trained and competent for the work they do. Both the person conducting the work and his/her manager are responsible for ensuring that he/she has the necessary training and certification to perform the work.

#### **HSE req. 045 Competence matrix**

The employer shall specify the training requirements for each role in the organisation, and shall keep records of each person's training and relevant certification.

The employer shall present upon request:

- 1) List of training requirement for each position
- 2) Training matrix, showing the current status for training for crew working offshore
- 3) Curriculum Vitae or other type of summary of education, training and experience for each employee



## 6.2 Training requirements for personnel working offshore

Specific minimum training requirements are based on the need to be prepared for a situation which requires personnel transfer offshore. There is also a need to ensure that people working at heights know how to use safety equipment and know how to rescue others.

### HSE req. 046 Training requirements for personnel working offshore

The following minimum training requirements apply for all personnel working offshore:

- 1) Personnel conducting transfer via boat landing (see HSE req. 023)
  - a. Transferring personnel shall have in-date 'GWO Sea Survival' or 'RUK Marine Safety Training – vessel-to-vessel transfer' certificate, as a minimum
  - b. Marine crew: Instead of 'GWO Sea Survival', STCW Basic Training is approved
  - c. Rescue personnel shall have in-date 'GWO Working at Heights' or 'RUK Working at Heights' certificate, as a minimum
- 2) Personnel that work at height or supervise work at height (see HSE req. 003):
  - a. GWO 'Working at heights', or:
  - b. RUK 'Working at Height & Rescue Training - Wind Turbines'
  - c. Personnel working in the German sector shall renew certificate yearly
- 3) Personnel conducting transfer with helicopter (see HSE req. 024):
  - a. Only persons with valid Helicopter Underwater Egress Training (HUET) certificates may take part in personnel transfer with helicopter. For UK: CA-EBS certificate is required

The FOO company's HSEQ Manager is authorised to approve deviations from the training requirements on a case-to-case basis.



### 6.3 Safety inductions

Safety inductions are provided before work starts on a site or vessel to allow personnel to work safely, obtain information of who to contact if they observe unsafe conditions, and provide clear instructions on what actions to take in an emergency.

#### **HSE req. 047 Safety inductions**

- 1) All personnel shall have an induction before work starts
- 2) For work on vessels:
  - Permanent personnel (marine crew and persons that sleep on board/work offshore) shall receive full induction
  - Visitors/daytime personnel (persons that do not sleep on-board) shall receive a reduced induction covering necessary information to enable them to work on the site or vessel alone
- 3) The safety induction should include sufficient relevant safety information, as a minimum:
  - General safety and security rules
  - Responsibilities
  - Minimum PPE requirements
  - Emergency plans and phone numbers
  - Hazards related to the work site/vessel
  - Environment
  - PTW system (if applicable)
  - Working hours
  - Reporting and documentation of unsafe conditions
- 4) Records of attendance to inductions shall be kept
- 5) Visitors and personnel that have not been inducted should be escorted at all times on the work site or on board the vessel



## 7 Health related requirements

### 7.1 Medical fitness

The following apply to ensure that personnel meet the minimum health requirements:

#### HSE req. 048 Medical fitness

- 1) All personnel shall be fit for the work they are set to perform
- 2) All personnel shall have medical certificates in accordance with applicable regulations
- 3) Personnel that shall work offshore shall hold a valid health certificate in accordance with the STCW Code, Section A-I/9 medical certificate, or equivalent

### 7.2 Drugs and alcohol

FOO has zero tolerance for drugs and alcohol while at work.

#### HSE req. 049 Drugs and alcohol

- 1) Vessels: The following drugs and alcohol policy applies for offshore work:

*The only acceptable level of drug and alcohol while on board our vessels is zero.*

*It is prohibited to bring on board or to be in the possession of drugs or alcohol, except prescription drugs which shall be reported immediately upon arrival on board.*

*This drugs and alcohol policy applies to all crew members as well as any other person on board the vessels.*

It is the responsibility of the Master to ensure that the use of medically prescribed drugs does not impact safety.

- 2) Onshore sites: The following drugs and alcohol policy applies for onshore work:

*The only acceptable level of drug and alcohol while working onshore is zero.*

*It is prohibited to be in possession of alcohol and illegal drugs on site.*



### 7.3 Welfare facilities

In order to ensure satisfactory work conditions, basic welfare facilities need to be provided at all work sites onshore and vessels.

#### **HSE req. 050 Welfare facilities**

The work site/vessel shall be provided with adequate welfare facilities in accordance with applicable laws, rules, and regulations, including:

- 1) Toilet facilities
- 2) Washing facilities
- 3) Place to eat
- 4) Place to store clothing
- 5) Rest area with proper heating, lighting and ventilation
- 6) Maintenance routines for the welfare facilities

### 7.4 Work hours

Adequate rest is imperative to keeping a high safety level. It is a clear management responsibility to ensure that work hour limitations are not exceeded.

#### **HSE req. 051 Work hours**

- 1) Work hours on onshore sites shall comply with the local national laws and regulations
- 2) Work hours for marine crew shall be in compliance with maritime regulations
- 3) Work hours for non-mariners working offshore shall be in compliance with marine regulations and/or local national laws and regulations (if applicable)





## 8 Emergency Response requirements

FOO companies establish generic or project specific Emergency Response plans for handling incidents, emergencies and crises.

For each offshore installation project, an Emergency Response bridging document will be provided as documented agreement between client, project and vessel.

### **HSE req. 052 Emergency Response Plans**

- 1) Each offshore project shall provide an Emergency Response bridging document, incorporating and bridging any requirements specified by the Client
- 2) Subcontractors, onshore sites and vessels shall provide Emergency Response plans as needed
- 3) Any bridging shall be agreed on a case-to-case basis



## 9 Document revision history

### 9.1 Revision A

Para.	Req.	Title	Changes
All	All	General	<p>Compared with FOWIC HSE Manual (Rev H), this document has been restructured to encompass all FOO companies. This means that paragraphs and HSE requirement numbers are changed. Except for reformulating of text, there are no significant changes to existing requirements.</p> <p>Four new paragraphs added:</p> <ul style="list-style-type: none"> <li>– 2.9 Use of telehandlers and forklifts</li> <li>– 2.10 Use of portable generators</li> <li>– 2.16 Travel</li> <li>– 2.17 Company vehicles and rental cars</li> </ul>

### 9.2 Revision B

Para.	Req.	Title	Changes
1.5	-	Authority to stop work	Added 'Stop work policy'
2.3	003, 10)	Working at heights	Added requirement for personal check before work at height
2.4	004	Dropped objects	Securing tools, establish drop zones, use of shackle cotter pins, 2m-rule for lifting, secure fasteners for fixed equipment
2.7	007	Hot works	Re-phrased requirement, introducing new safety requirements
2.8	008	MEWPs	Added requirement for banksman when moving MEWPs. Need for safety measures when working over water subject to risk assessment.
2.9	009	Use of telehandlers, and forklifts	Added mobile cranes. Added requirement for banksman when moving equipment on site/on deck. Reformulated the requirement
2.10	010	Portable generators	Requirement to follow vessel's refueling procedure
2.14	015, 6)	Electrical work	IP44 as minimum requirement, IP67 when it is not possible to avoid potential risk for water ingress
2.15	017	Environmental	Rephrased requirement for clarity
3.7	027	ROV operations	Added reference to IMCA guidelines. Rephrased requirement for PTW from wind farm
4.9	040	Monthly reporting	Changed from 'shall' to 'should'
5.3	042 043	Risk criteria and risk factors	Updated 'Common risk criteria' and 'Common risk acceptance criteria'
6.2	046	Training req. for personnel working offshore	Marine Crew: STCW Basic Training certificate deemed equivalent to 'GWO Sea Survival'/'RUK Marine safety training & vessel transit and transfer'
-	-	Whole document	Corrected typos and rephrased text for clarity

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

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**Case No(s). 16-1871-EL-BGN**

Summary: Notification of Public Disclosure of Application Exhibits S and P electronically filed by Mr. William V Vorys on behalf of Icebreaker Windpower, Inc.