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Siemens Gamesa Wind Training Catalogue

October 2019

SIEMENS Gamesa
RENEWABLE ENERGY

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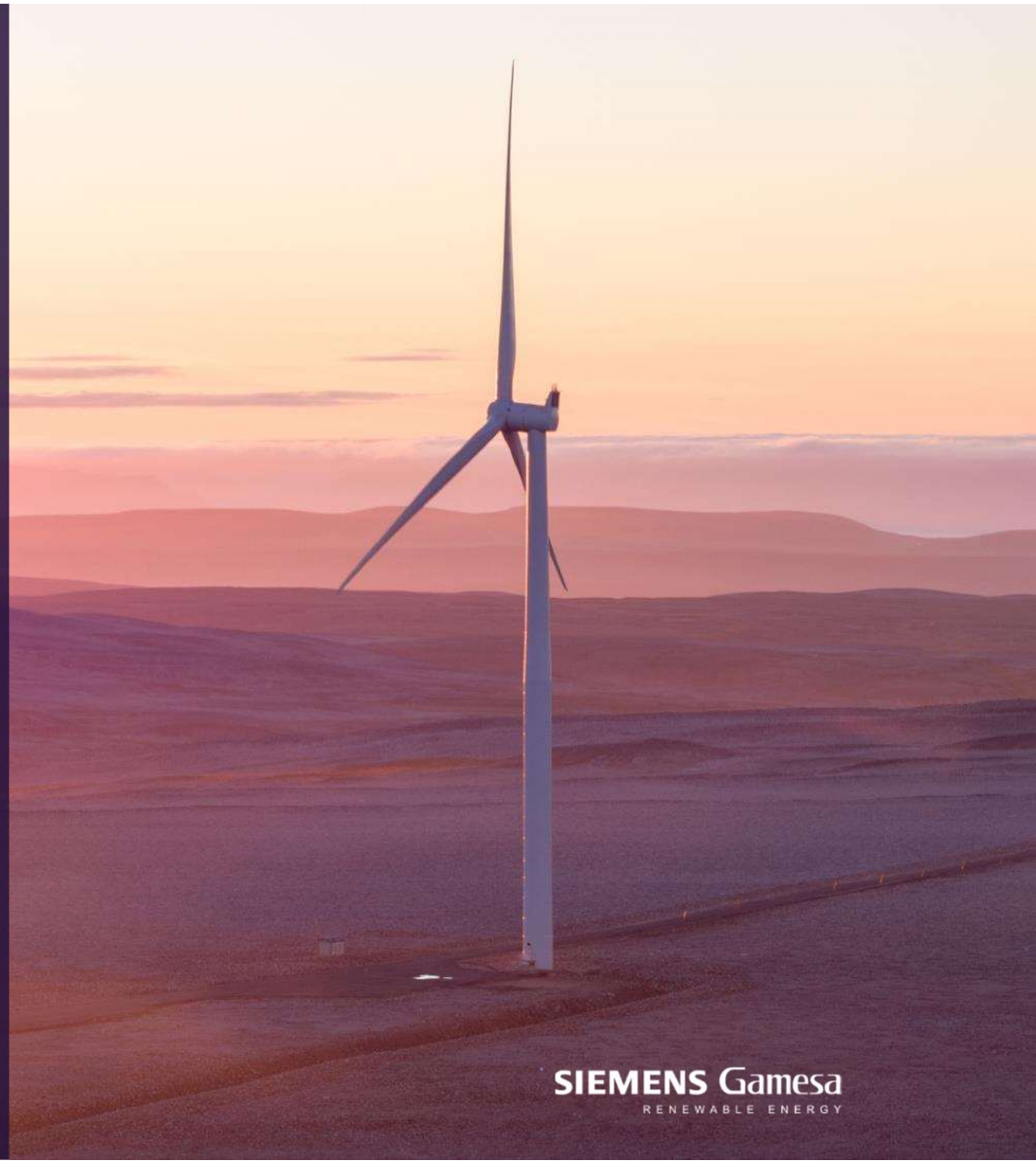
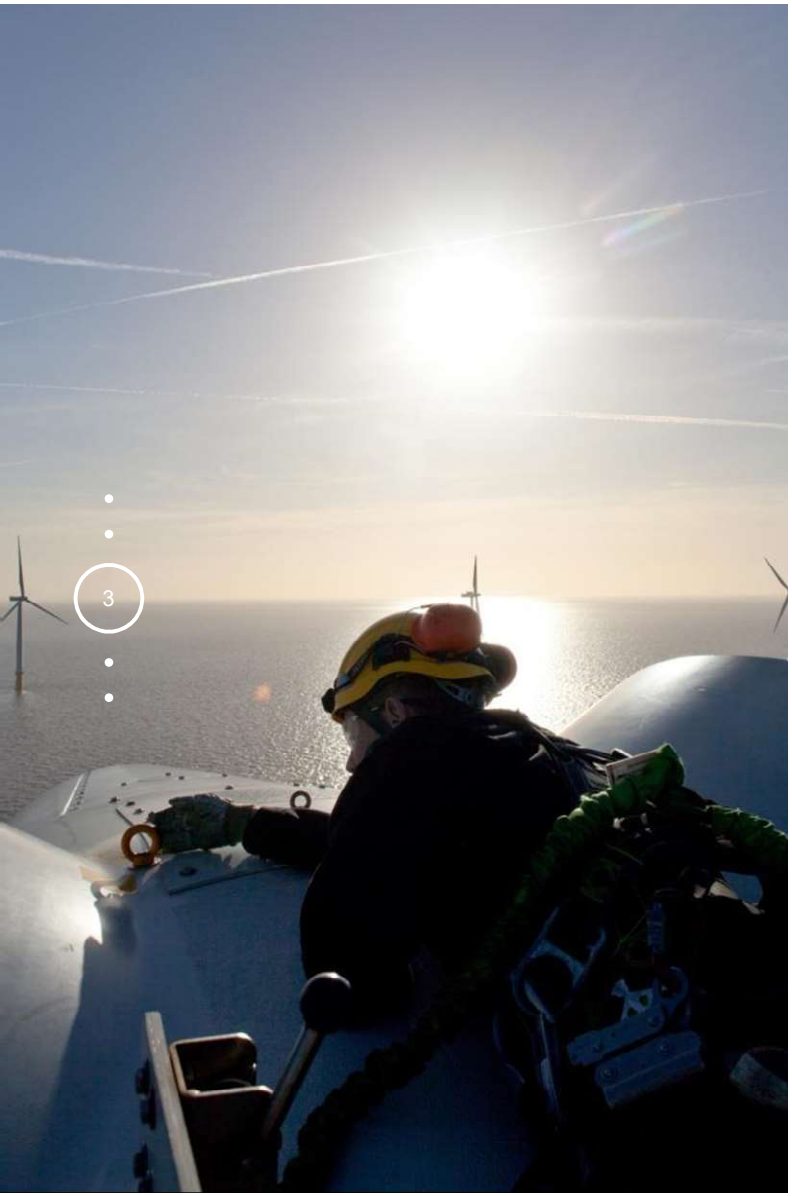
In Siemens Gamesa Renewable Energy we offer you a flexible and comprehensive portfolio of training solutions designed to train and educate specialist to the highest quality standards.

This catalogue gives you an overview of everything you need to get started. Thank you for taking the time - enjoy the journey and stay safe.

Head of Global Training
Jacob Frederiksen





Our approach to training

Siemens Gamesa strives to deliver training that ensures the best possible learning outcome by continuous improvement of our training facilities and training methods. We believe our range of trainings are designed to train the service specialists according to the highest quality standards on the market.

What we offer:

- Wide range of technical and safety courses;
- People/skills;
- Learning by doing;
- GWO Certified training provider;
- We develop training on the basis of the business need;
- Refresher courses;
- Profiles/quailifications;
- Technical training modules designed exclusively for Siemens Gamesa turbines;
- We encourage a lifelong safety training and conduct all operations with a safety-first mindset.

Do not hesitate to join the journey of competence improvement and let the experts assist you in selecting the right training programs for you and your personnel. Welcome to our world of opportunities - we are glad to have you in our team!

If you have any special requests or programs you may desire, please contact your local service sales and proposal key account manager.

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Offered learning methods

Classroom training:
- Performed in one of our Siemens Gamesa training centers;
- Executed by our qualified instructors;
- Ability to receive education in a safe testing environment;
- Beneficial for high risk tasks.

Onsite training:
- Training performed on site;
- Our qualified instructors will come to you;
- Very little travel time for the technicians;
- Costs such as: expenses for hotels, meals, flight tickets, car rentals etc. are reduced and eliminated for your technicians;
- Less administration as no time is wasted on applying for visas, work permits and other time consuming tasks.

On the job training (OJT):
- On site training performed by an experienced technician;
- Beneficial for low risk tasks;

e-learning:
- On-line training via our Learning portal;
- No travel expenses;
- Can be performed during low activity periods on site.

Virtual training:
- Performed in one of our Siemens Gamesa training centers;
- Perfect for simulations on highly complex tasks;
- Perfect for simulating conditions that rarely appear on site or cannot be predicted.

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Siemens Gamesa Technician Profiles

Siemens Gamesa technician education is one thing we take very serious as the safety and the quality of work is crucial for the success of our business.

To accommodate this we have created technician profiles which consist of several mandatory qualifications to stay compliant and live up to the requirements set by legal, standards, business, safety and quality requirements.

The Technician Profiles are as such:

- Basic Technician can assist during all types of work;
- Maintenance Technician can assume responsibility of the O&M tasks, leads and instructs the team;
- Troubleshooter can assume responsibility of troubleshooting, leads and instructs the team;
- Blade Technician can perform repairs on blades.

The Siemens Gamesa technician training is a mix of classroom, e-learning and on the job training

This catalogue consist of both mandatory and task specific requirements.
The Task specific requirements can be tailored to match the needs of your technicians.

If you have any special requests or programs you may desire, please contact your local service sales and proposal key account manager.

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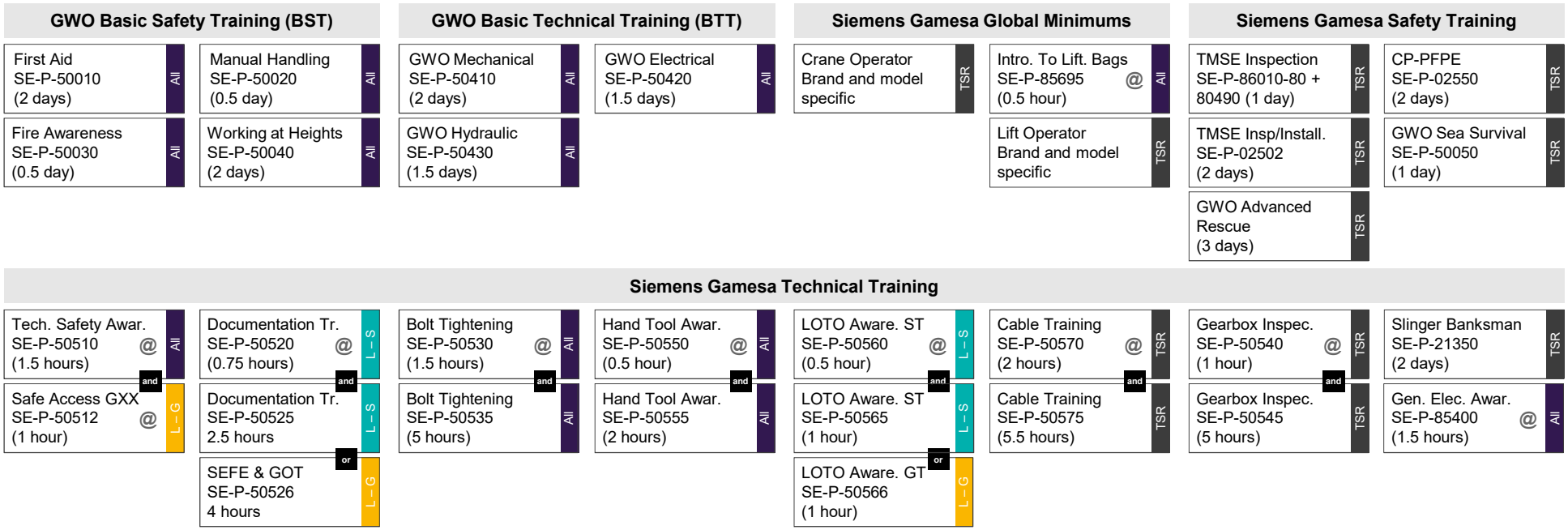
Legend

All	A MBS or MBW course common across all technologies.
L – S	A MBS or MBW course for working on Siemens technology platforms.
L – G	A MBS or MBW course for working on Gamesa technology platforms.
TSR	A TSR training requirement that must be met if working the associated tasks or equipment.
@	A digital training product, such as eLearning, simulator or Virtual Reality.

Anne Kramer | Janus Cronhammar | Sandra Sarkute Nielsen | René Svanum | SGRE SE R OPS GT TREX

Basic Technician Training Path



Anne Kramer | Janus Cronhammar | Sandra Sarkute Nielsen | René Svanum | SGRE SE R OPS GT TREX

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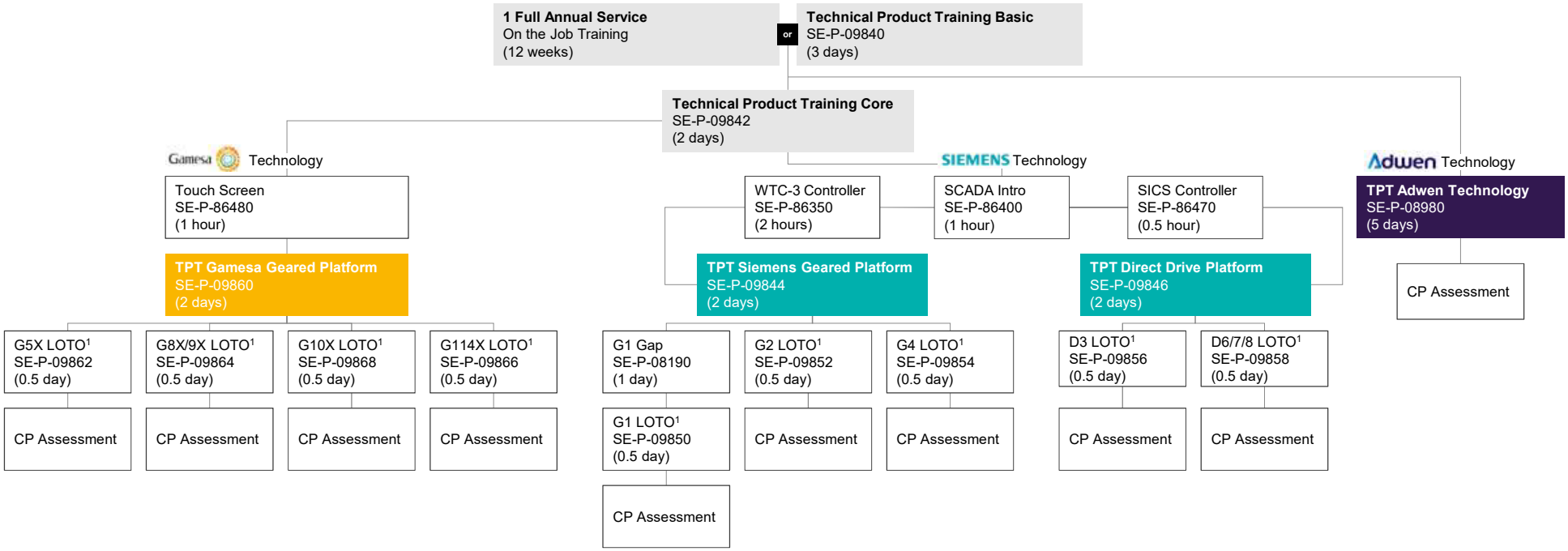
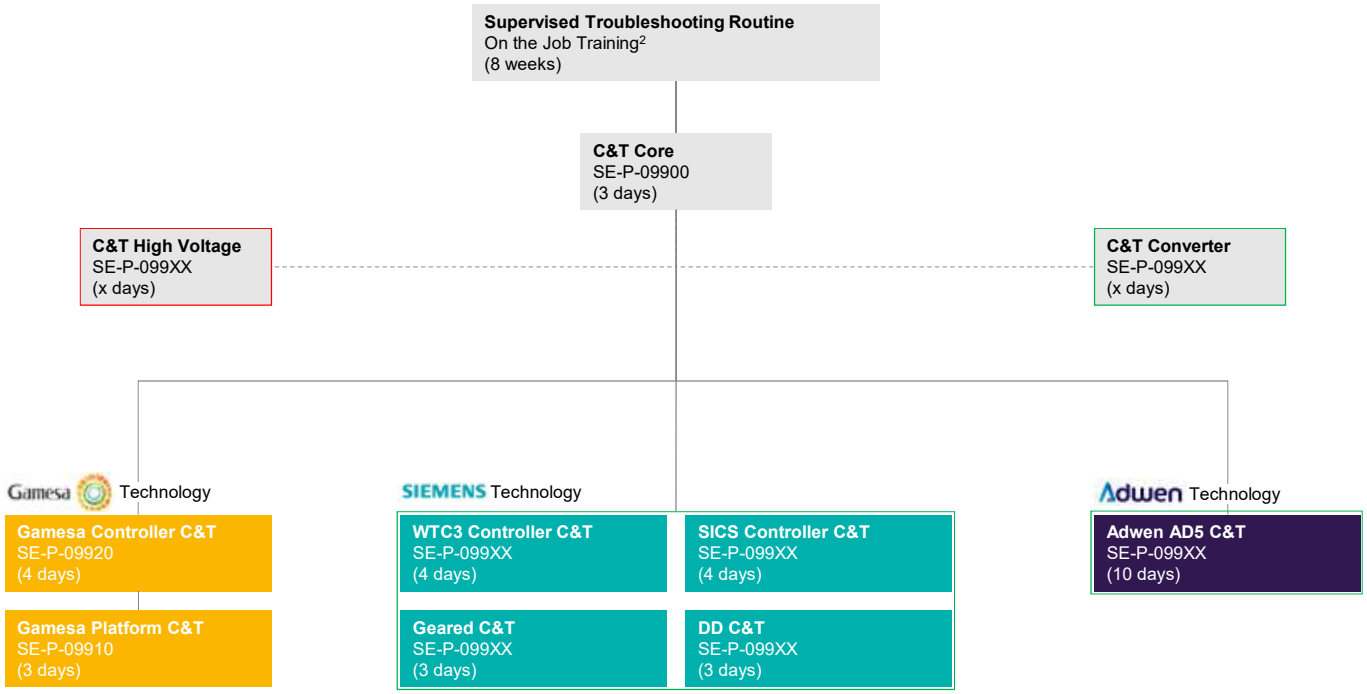
Maintenance Technician Training Path



1 Can be delivered onsite by an AP/APT, as per PRO-20643 ref. 3.6.2.2

Anne Kramer | Janus Cronhammar | Sandra Sarkute Nielsen | René Svanum | SGRE SE R OPS GT TREX

Troubleshooter Training Path



2 Recommended only In development On hold

Anne Kramer | Janus Cronhammar | Sandra Sarkute Nielsen | René Svanum | SGRE SE R OPS GT TREX

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Training Center in Brande, Denmark

Training Center Denmark aspires to be a challenging and attractive training center with an ownership-culture that facilitates second to none training activities within the renewable energy industry.

Training Center Denmark is:

- Dedicated in the efforts of providing a safe, secure, and second to none training;
- Loyally pursuing compliance with industry standards;
- Honest and transparent in the execution of training.

Training Center Denmark offers you activities with:

- Quality through uniform training;
- State of the art training equipment;
- Highly competent training instructors.

Training Center in Budapest, Hungary

Training Center Hungary focuses on customers to deliver high competence and value to the renewable energy industry. We make sure that our facility and team keeps up with the wind business' innovation pace to become the leading training provider in the Central European region.

Training Center Hungary is:

- Delivering the best quality along with the highest health & safety standard
- Continuously improving the training service, competencies and the training facility itself;
- Conducting the courses with highly educated safety instructors who are adding extra value building upon their prctical field experince.

Training Center Hungary offers:

- Easy access, central location within Central Europe;
- High quality trainings at a favorable price level;
- Excellence in providing effective practical knowledge besides theoretical vocational education.

Training Center in Orlando, USA

Training Center Orlando provides an innovative and industry leading training experience led by our professional staff. We continuously improve our training to create the best value and deliver the highest flexibility.

Training Center Orlando is:

- Dedicated to instilling a safety-first, zero harm mindset;
- Continuously pursuing compliance within industry and international quality standards;
- Committed to delivering easy-access training courses that are closely aligned with our customers' needs.

Training Center Orlando offers

- Cutting edge tools and technology;
- Professionally certified instructors;
- Proven ability to provide theoretical and practical hands-on training in multiple settings: classroom, online, onsite or customized location.

Training Center in Camacari, Brazil

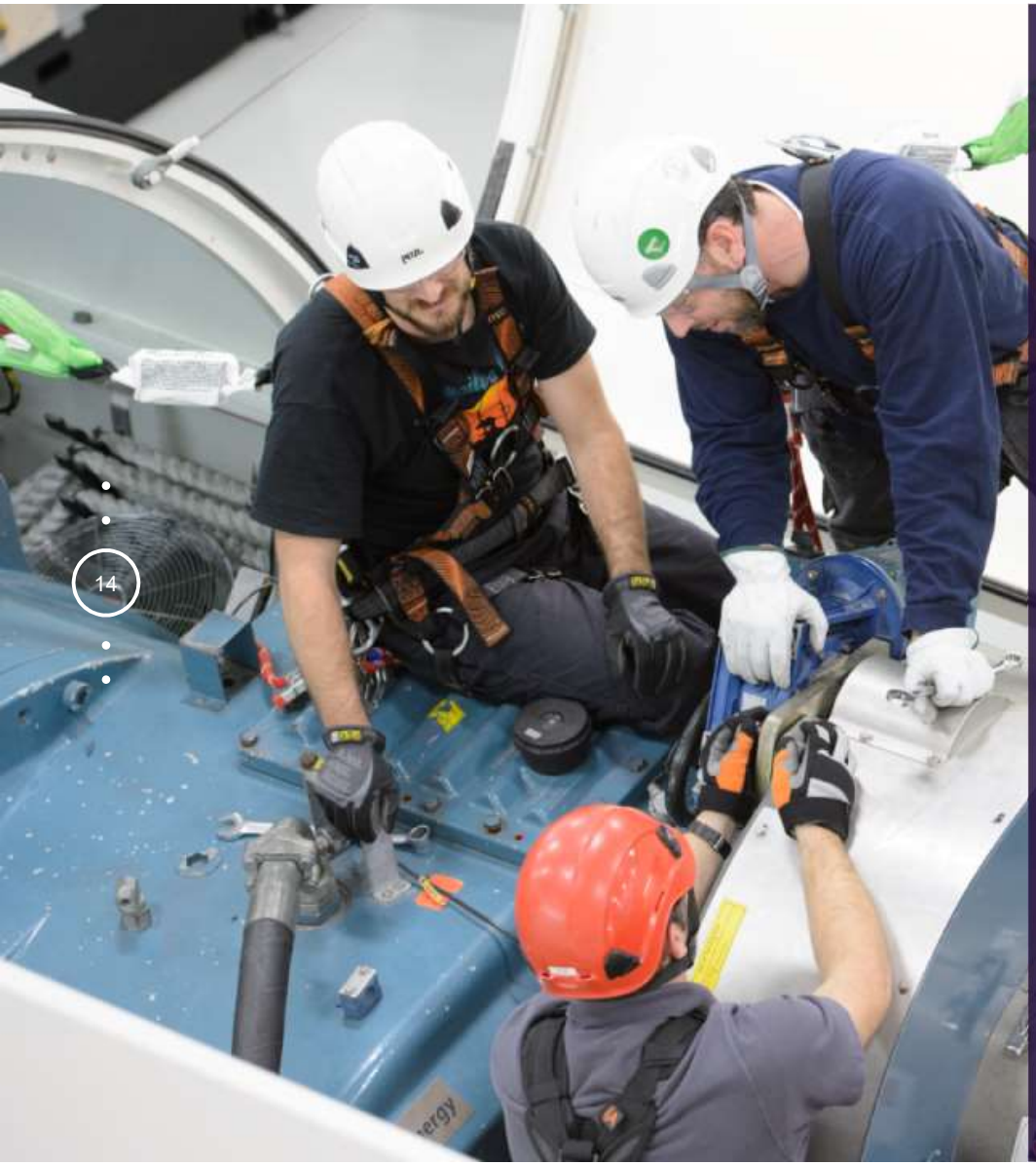
Training Center Brazil mission is to provide high quality safety and technical training to meet the tremendous challenge in wind energy to which we remain rigidly committed.

Training Center Brazil is:

- The training center in Brazil is the only one if its kind in South America,.
- Providing new updated global standardized industry training;
- Implementing compliance and safety with industry standards;
- Empowering our technicians.

Training Center Brazil offers you activities with:

- Quality through standardized uniform training;
- New and updated training equipment;
- Highly training instructors.



Training Center United Kingdom

Training Center United Kingdom aspires to deliver challenging and contextual training on a variety of Technical and Safety equipment in a modern newly commissioned Training Centre.

Training Center United Kingdom is:

- Unrivalled with facilities for Technical and Safety Training;
- Pursuing excellence in training delivery;
- Focused on an excellent customer experience.

Training Center United Kingdom offers you activities with:

- Highly competent Technical and Safety training instructors;
- A culture of ensuring training is focused to the individual;
- A safe learning environment.

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Training Center in Pamplona, Spain

Training Center Pamplona is aimed at promoting talent, for that purpose updated training courses are delivered to meet the highest requirements of every single stakeholder in the field of wind energy to which we are closely tied.

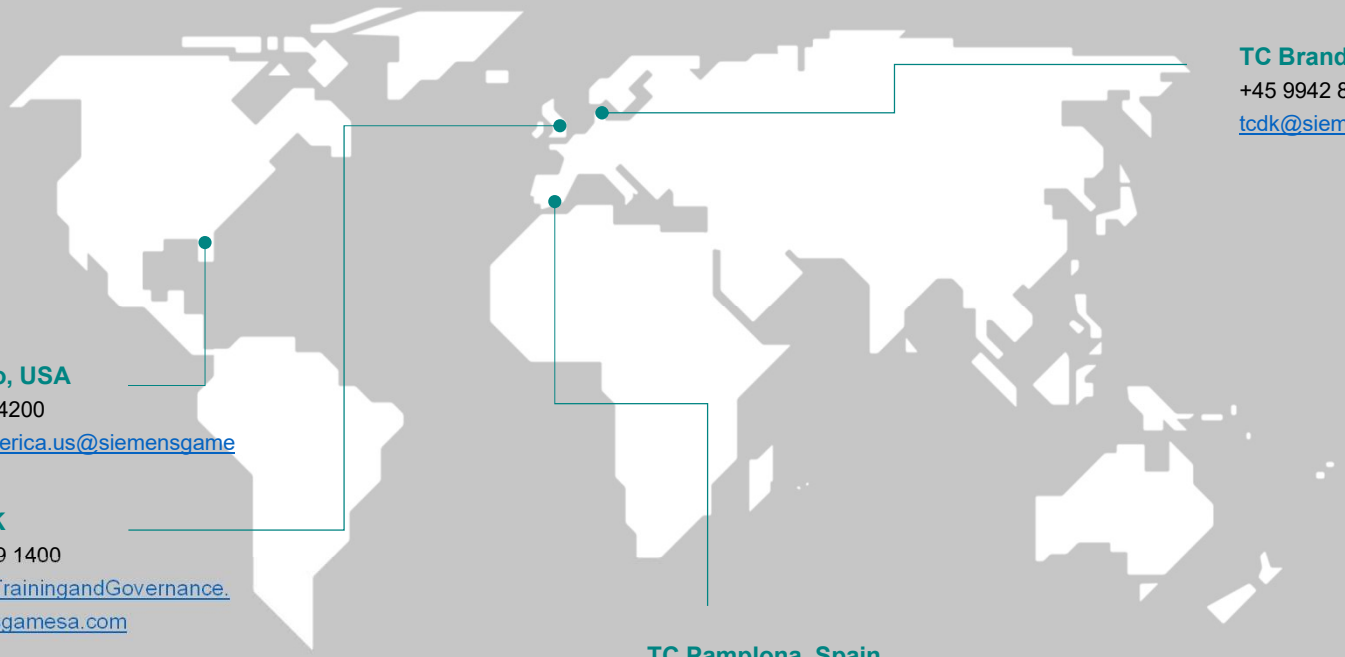
Training Center Pamplona is:

- A point of reference within the sector;
- Committed to customer satisfaction experience;
- A nearby site where your requests are listened.

Training Center Pamplona offers you activities with:

- Our guarantee that your time will be invested in the best way;
- Enough flexibility to adapt us to your needs: classroom, online, onsite or customized location;
- Highly skilled training instructors.

Training facilities



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In addition to the training held in our training Centers, we also offer Onsite training to meet the needs and requirements from our customers.

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Safety Trainings

Technical Trainings

18

Technician Safety Trainings

Training SE-P-50030

GWO BST Fire Awareness

Technician

Validity period 2 years

4 hours

DK, UK, US, DE, HU

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Purpose

The aim of this course is to qualify the Delegates to prevent fires, conduct initial and appropriate judgement when evaluating a fire, manage evacuation of personnel to ensure all are safely evacuated and accounted for in the event of an unmanageable fire emergency and, if it is judged to be safe, to effectively extinguish an initial fire by using basic hand held fire extinguishing equipment.

Who should attend

Personnel working in the wind industry or related fields needing to obtain/refresh their GWO BST/BSTR Fire Awareness certificate.
Delivery of the Fire Awareness Refresher module covers same content, duration, learning objectives as described in BST Fire Awareness. The Fire Awareness training can consist of first time delegates and refresher delegates in the same classroom.

Objectives

- Explain how fire develops and spreads;
- Explain the causes of fires in wind turbines and risks associated with fires in wind turbines;
- Identify signs of fire in a wind turbine environment;
- Explain how to use the contingency plan of a wind turbine, including smoke detection and emergency escape procedures;
- Demonstrate correct actions when fire is detected and fire is observed, including correct use of fire extinguishing equipment by means of available fire extinguishing equipment in a WTG.

Competencies

- Competent to work with fire awareness within GWO accredited companies or sites;
- Can access SGRE turbines in accordance with PRO-15833 Ap2 Siemens Access Safety Training.

Training SE-P-50010

GWO BST First Aid

Purpose
The purpose of this module is to administer safe and effective First Aid in the wind turbine industry/ WTG environment in accordance with GWO First Aid training through theoretical and practical training.

Who should attend
This course will enable all personnel to work with First Aid in a safe manner both onshore and offshore.

Objectives
Knowledge:
- Able to understand the importance of carrying out First Aid in a safe and sound manner in a WTG according to ERC and AHA guidelines.

Skills:
- Able to identify and explain normal function, signs & symptoms of serious and minor injuries and illness;
- Correct order of management in an emergency situation in a WTG;
- Correct use of life saving first aid using the primary survey A-B-C;
- Correct use of an automatic external defibrillator (AED);
- Correct use of First Aid equipment.

Competencies
- Competent to work with First Aid within GWO accredited companies or sites;
- Can access SGRE turbines in accordance with PRO 15833 Ap2 Siemens Access Safety Training.

Technician

Validity period 2 years

2 days

DK, UK, US, DE, HU

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-50210

GWO BST First Aid Refresher

Purpose
The aim of this BSTR First aid module is to review and build on previously gained knowledge and skills from BST First Aid through theoretical and practical training so that delegates can administer safe and effective First Aid in the Wind Industry in accordance with GWO BST/BSTR First Aid training.

Objectives
- Demonstrate understanding of the importance of safely and correctly carrying out First Aid in accordance with the legislative requirements of their geographic location and according to European Resuscitation council (ERC) and American Heart Association (AHA) guidelines;
- Identify and explain normal function, normal signs and symptoms of serious and minor injuries and illness related to the human body;
- Demonstrate understanding and correct order of management in emergency situations in a wind turbine;
- Demonstrate correct use of lifesaving First Aid using the Primary survey, Airways Breathing Circulation (A B C / C-A-B);
- Demonstrate correct use of an Automatic External Defibrillator(AED);
- Demonstrate correct use of ordinary First Aid, the Secondary Survey;
- Demonstrate correct use of First Aid equipment in First Aid scenarios.

Competencies
Upon completion of the course the participants can access SGRE turbines in accordance with PRO 15833 Ap2 Siemens Access Safety Training.

Technician

Validity period
2 years

8 hours

DK, UK, US, DE, HU

Language	**EN**
Theory (%) / practice (%)	**20/ 80**
On site	**yes**

Basic & Advanced First Aid GWO&BG

Purpose

The purpose of this course is, to give delegates skills and competencies to Act as Basic & Advanced first aid providers with the extended skills and tools available to treat a casualty in the prolonged time until transportation to onshore facilities and professional medical support is available. This is achieved by providing theoretical and practical training.

Who should attend

Personnel working in the German sector offshore (EEZ).

Objectives

Knowledge and Skills:

- Secure place of accident, own and bystanders safety;
- Place an emergency call, site specific;
- Maintain vital life functions for casualty;
- Secure free airway by applying laryngeal tubes if unconscious;
- Maintain sufficient breathing using BVM (Bag Valve Mask);
- Control circulation by mean of suitable dressings or tourniquet;
- Monitor vital functions by mean of pulse oximeter and ECG;
- Record and send ECG to onshore Medic Consultant;
- Apply splint material and cervical immobilizer, prevent hypo/hyperthermia, prepare casualty for transport;
- Tele consulting with responsible medic onshore, and on his/her advice pain medication as prescribed (site specific);
- Logging of data/information/treatment regarding casualty to follow casualty to shore.

Technician

Validity period
1 year

4 days

DE

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Basic & Advanced First Aid GWO&BG Refresher

Purpose

The purpose of this course is, by theoretical and practical training to refresh Advanced first aid (DGUV) providers skills and competencies to act as advanced first aid providers with the extended skills and tools available to treat a casualty in the prolonged time until transportation to onshore facilities and professional medical support is available.

Who should attend

Personnel working in the German sector offshore (EEZ).

Objectives

Knowledge and Skills:

- Secure place of accident, own and bystanders safety;
- Place an emergency call, site specific;
- Maintain vital life functions for casualty;
- Secure free airway by applying laryngeal tubes if unconscious;
- Maintain sufficient breathing using BVM (Bag Valve Mask);
- Control circulation by mean of suitable dressings or tourniquet;
- Monitor vital functions by mean of pulse oximeter and ECG;
- Record and send ECG to onshore Medic Consultant;
- Apply splint material and cervical immobilizer, prevent hypo/hyperthermia, prepare casualty for transport;
- Tele consulting with responsible medic onshore, and on his/her advice pain medication as prescribed (site specific);
- Logging of data/information/treatment regarding casualty to follow casualty to shore.

Technician

Validity period
1 year

2 days

DE

Language	**EN**
Theory (%) / practice (%)	**20/ 80**
On site	**yes**

Training SE-P-50020

GWO BST Manual Handling

Purpose

The aim of this Module is to increase the awareness of ergonomics in our business; to encourage positive Manual Handling behavior and to train the Delegates' ability to perform Manual Handling tasks in a safe manner reducing long-term effects of musculoskeletal disorder injuries.

Who should attend

Personnel working in the wind industry or related fields needing to obtain/refresh their GWO BST/BSTR Manual Handling certificate.
Delivery of the Manual Handling Refresher module covers same content, duration, learning objectives as described in BST Manual Handling. The Manual Handling training can consist of first time delegates and refresher delegates in the same classroom.

Objectives

- Explain the importance of carrying out work duties in a safe and sound manner in accordance with the legislative requirements of their geographic work location;
- Identify aspects of the job tasks that could increase risk of developing muscular/ skeletal injuries;
- Explain safe practices of Manual Handling, including the correct handling of equipment;
- Identify signs and symptoms of injuries related to poor Manual Handling techniques;
- Identify injury reporting methods;
- Demonstrate a problem solving approach to Manual Handling in a wind turbine environment;
- Demonstrate Manual Handling risk reduction techniques.

Competencies

- Competent to work with manual handling within GWO accredited companies or sites;
- Can access SGRE turbines in accordance with PRO-15833 Ap2 Siemens Access Safety Training.

Technician

Validity period 2 years

4 hours

DK, UK, US, DE, HU

Language	**EN**
Theory (%) / practice (%)	**40/ 60**
On site	**yes**

Training SE-P-50040

GWO BST Working at Heights

Purpose

The aim of this course is to give the participants the necessary basic knowledge and skills through theoretical and practical training. Participants will learn to use basic fall protective equipment, to perform safe work at heights, safe emergency decent and safe and comprehensive basic rescue from heights in a remote wind turbine environment in accordance with BST module Working at Heights.

Who should attend

Mandatory for anyone working in rescue zone 1 in WTG.

Objectives

Knowledge:

- Able to demonstrate understanding of current national legislation regarding working at heights;
- Able to demonstrate knowledge of hazards and risks associated with working at height specific to a WTG.

Skills:

- Correct identification of PPE, including identification of European / Global standard markings e.g. harness, hard hat, lanyards etc.;
- The knowledge and skills to correctly inspect, service, store and don the relevant PPE, e.g. harness, lanyards, fall arresters and work positioning equipment;
- Correct use of the relevant PPE, e.g. harnesses lanyards, fall arresters and work positioning equipment. This includes correct identification of anchor points, safe conduct while working from or accessing a ladder, and providing Fall Restraint over Fall Arrest;
- Correct use of evacuation devices;
- How to approach rescue situations in WTGs and use rescue equipment effectively and efficiently.

Competencies

Upon successful completion of this course, the delegates are competent to work at heights and perform basic rescue from Rescue Zone 1 (in accordance with Siemens Rescue Zone, PRO-15833).
Delegates are considered competent to work at heights within GWO accredited companies or sites

Technician

Validity period 2 years

2 days

DK, UK, US, DE, HU,ES

Language	**EN, DE**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-50240

GWO BST Working at Heights Refresher

Purpose

The aim of this BSTR Working at Heights Module is to review and build on previously gained knowledge and skills through theoretical and practical training so that Delegates can administer safe and effective Working at Heights in the turbine industry/WTG environment in accordance with GWO Refresher Working at Heights training.

Who should attend

Mandatory for anyone working in rescue zone 1 in WTG.

Objectives

- Demonstrate knowledge of hazards and risks associated with working at heights in a WTG;
- Demonstrate the knowledge of and skills to correctly pre-use inspect, service, store and correctly fit his harnesses, Fall Arrest lanyards, work positioning lanyards and other PPE;
- Demonstrate correct use of the relevant PPE, e.g. harnesses, Fall Arrest lanyards, guided type fall arresters and work positioning lanyards. These include correct identification of anchor points and correct ladder conduct;
- Demonstrate correct use of evacuation devices;
- Demonstrate how to approach rescue situations in WTGs and use rescue equipment efficiently.

Competencies

Upon successful completion of this course, the delegates are competent to work at heights and perform basic rescue from Rescue Zone 1 (in accordance with SGRE Rescue Zone, PRO-15833).

Delegates are considered competent to work at heights within GWO accredited companies or sites.

Technician

Validity period 2 years

8 hours

DK, UK, US, DE, HU,ES

Language	**EN**
Theory (%) / practice (%)	**20/ 80**
On site	**yes**

Training SE-P-05280

SGRE Working at Heights with Manual Handling

Purpose

The overall purpose of the course is to give the participants the necessary basic knowledge and skills of working at heights and manual handling through theoretical and practical training. Participants will learn to use basic fall protective equipment, to perform safe work at heights, safe emergency decent and safe and comprehensive basic rescue from heights in a remote wind turbine environment. Participants will also learn positive manual handling behavior and tech performance manual handling activities in a safe manner in the wind turbine industry/environment.

Who should attend

Personnel, working in the wind industry or related fields, who require Working at Heights and Manual Handling certifications.

Objectives

- Identify 2 national law making organizations related to Working at Heights;
- Locate safety labels and documentation on harnesses, fall arrest systems, fall restraint systems, and self-retractable lines;
- Demonstrate proper user inspections on harnesses, fall arrest systems, fall restraint systems, and self-retractable lines;
- Recall the degree of maximum angles permitted on SRLs;
- Demonstrate correct work positioning in a WTG;
- Locate tie off points within Siemens specified rescue zones;
- Demonstrate a safe and correct evacuation;
- Distinguish between parts and pieces of PPE;
- Take proper preventative measures in the workplace to prevent suspension trauma and manual handling related injuries;
- Treat and relieve suspension trauma in a partner through the use of recovery positioning;
- Demonstrate proper Manual Handling risk reduction techniques;
- Recognize and identify risks in the workplace related to manual handling;
- Recite the proper reporting methods for work related injuries.

Competencies

Work at heights in SGRE Turbines in accordance with Siemens Gamesa PRO 15833 and perform basic rescue from Rescue Zone 1 (in accordance with SWP Rescue Zone, PRO-15833).

Technician

Validity period
2 years

2 days

US

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-05282

SGRE Working at Heights with Manual Handling Refresher

Purpose

The overall purpose of the course is to review and build on previously gained knowledge and skills through theoretical and practical training so that the delegates can follow safe and effective Working at Heights practices in the WTG environment. Participants will also learn positive manual handling behavior and tach performance manual handling activities in a safe manner in the wind turbine industry/environment.

Who should attend

Personnel, working in the wind industry or related fields, who require Working at Heights and Manual Handling certifications.

Objectives

- Identify 2 national law making organizations related to Working at Heights;
- Locate safety labels and documentation on harnesses, fall arrest systems, fall restraint systems, and self-retractable lines;
- Demonstrate proper user inspections on harnesses, fall arrest systems, fall restraint systems, and self-retractable lines;
- Recall the degree of maximum angles permitted on SRLs;
- Demonstrate correct work positioning in a WTG;
- Locate tie off points within Siemens specified rescue zones;
- Demonstrate a safe and correct evacuation;
- Distinguish between parts and pieces of PPE;
- Take proper preventative measures in the workplace to prevent suspension trauma and manual handling related injuries;
- Treat and relieve suspension trauma in a partner through the use of recovery positioning;
- Demonstrate proper Manual Handling risk reduction techniques;
- Recognize and identify risks in the workplace related to manual handling;
- Recite the proper reporting methods for work related injuries.

Competencies

Qualified and competent to work at heights in SGRE Turbines in accordance with Siemens Gamesa PRO 15833 and perform basic rescue from Rescue Zone 1 (in accordance with SWP Rescue Zone, PRO-15833).

Technician

Validity period 2 years

8 hours

US

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-50050

GWO BST Sea Survival

Purpose
The purpose of this course is, by theoretical and practical training, to give the participants the basic knowledge and skills to act safely and take the correct preventive actions to enable survival at sea.

Who should attend
Everyone requiring sea survival techniques to enable them to work offshore.

Objectives
Knowledge & Skills:
- Dangers and symptoms in relation to hypothermia and drowning;
- Understanding of the advantages and limitations of the different LSA, PPE and PFPE commonly used Offshore;
- Safe Transfer from vessel to dock, vessel to foundation and vessel to vessel;
- Emergency and safety procedures on installations vessels and WTG;
- First aid treatment of a "man over board";
- Evacuation from WTG to water;
- Individual and collective survival techniques at sea;
- SAR and GMDSS.

Competencies
Upon completion of the course the participants can access SGRE turbines in accordance with PRO 15833 Ap2 Siemens Access Safety Training Delegates are considered competent to work with Sea survival within GWO accredited companies or sites.

Technician

Validity period
2 years

1 day

DK, UK, DE

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-50250

GWO BST Sea Survival Refresher

Purpose

This module is to review and build on previously gained knowledge and skills through open questions and practical training. Delegates shall be able to act safely and take the correct preventive actions in all aspects of offshore operations from shore to installation vessel or Wind Turbine Generator, and vice versa, both during normal operation and in an emergency in an offshore wind turbine environment. Practicing relevant skills delegates will learn about interview techniques and consider the practical difficulties facing an investigator attending the scene of a serious incident.

Who should attend

People who work in the offshore wind industry and need refresher of the GWO BSTR / BST sea survival module.

Objectives

Knowledge:

- Dangers and symptoms related to hypothermia and drowning;
- Demonstrate safe transfer from vessel to dock, vessel to foundation and vessel to vessel;
- Demonstrate understanding of the advantages and limitations of the different Life Saving Appliances (LSA), Personal Protective Equipment (PPE) and Personal Fall Protection Equipment (PFPE) commonly used offshore in the wind energy industry and are able to use them accordingly;
- Emergency and safety procedures on installations, vessels and Wind Turbine Generators.

Skills:

- Demonstrate recovery and First Aid treatment of a "man over board“;
- Demonstrate evacuation from the mock Wind Turbine Generator to the water by using a rescue device;
- Demonstrate Individual and collective survival techniques at sea.

Competencies

Delegates will possess an awareness of the hazards encountered when working within the wind industry and how to control and mitigate these hazards. This GWO Refresher course will equip participants with the knowledge, skills and confidence to appropriately respond in the event of an emergency and to increase their safety through proper use of Personal Protective Equipment, emergency equipment and procedures.

Technician

Validity period
2 years

8 hours

DK, UK, DE

Language	**EN**
Theory (%) / practice (%)	**10/ 90**
On site	**yes**

Training SE-P-86420

GWO Sea Survival – Siemens Supplement

Purpose

The purpose of GWO Sea Survival e-learning - Siemens Supplement is to ensure that all technicians working offshore on Siemens Gamesa Wind Turbines are aware of and practice the correct procedure of transfer between Crew Transfer Vessels and Wind Turbine Generator Transition Pieces. The goal is Zero Harm, to prevent accidents due to incorrect transfer.

Objectives

Knowledge:

- The correct and safe Siemens Gamesa Offshore Transfer Procedure between the Crew Transfer Vessel and the Wind Turbine Generators Transition Piece, according to INS 17871;
- Procedure for aborting and continuing transfer;
- Procedure for when the Siemens Gamesa transfer connector fails to release Transferee.

In order for the e-learning to be successfully completed, the participants need to pass a test at the end of the course with a score of 100%.

Technician

Validity period
No expiry

30 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

GWO Advanced Rescue Training

Purpose

The aim of the course is to enable the delegates to perform rescue operations inside a WTG hub, spinner, blade, nacelle, tower and basement – in teams and as a single rescuer, by using industry standard rescue equipment, methods and techniques, exceeding those of GWO Working at Height. GWO Advanced Rescue Training (ART) consists of 4 course modules:

SE-P-50165 GWO ART Hub, Spinner & inside BladeSE-P-50160 GWO ART Nacelle, Tower & BasementSE-P-50170 GWO ART Single Rescuer Nacelle, Tower & Basement SE-P-50175 GWO ART Single Rescuer Hub, Spinner & inside Blade

Who should attend

The course is intended for personnel who will be working in the wind industry or related fields and will have their duties in a wind turbine environment. Personnel that may need or is selected to perform advanced rescue or lead an advanced rescue operation, where GWO Advanced Rescue Training may mitigate the identified risks. The course is applicable for personnel working in SGRE WTG Zone 2, 2A and 4 - according to valid Rescue Preparedness Procedures.

Objectives

- Assess and determine rescue strategy (relevant rescue method, technique, certified equipment, and required personnel) for various rescue scenarios in a WTG
- Assess and determine evacuation strategy during a rescue operation, attending to a clear and preferred evacuation route for the injured person outside or inside the tower. Apply rescue methods and techniques in performing descending and ascending rescue operations in a WTG – as a rescue team coordinator, team member and single rescuer
- Apply cervical collar, rescue stretcher, spine board, manually and power-driven lowering/raising rescue system (rescue device, pulley system or similar)
- Perform clear and precise communication during the rescue operation, and apply guidance to other emergency responders coordinating the handover of an injured person Explain and control common risks of hazardous energies and common hazards of enclosed space areas, when performing rescue operations in a WTG
- Explain national and local requirements and/or procedures for helicopter rescue in a WTG

Technician

Validity period 2 years

3 days

UK, DE,US

Language	**EN**
Theory (%) / practice (%)	**10/ 90**
On site	**yes**

GWO Advanced Rescue Training Refresher

Purpose

The aim of the course is to ensure the delegates are competent to perform:Safe work at height. Rescue operations inside a WTG hub, spinner, blade, nacelle, tower and basement – in teams and as a single rescuer, by using industry standard rescue equipment, methods and techniques, exceeding those of GWO Working at Height.

GWO Advanced Rescue Tra'ining (ART) Refresher consists of 3 course modules:SE-P-50165 GWO ART Hub, Spinner & inside BladeSE-P-50180 GWO ART Nacelle, Tower & Basement RefresherSE-P-50240 GWO ART Working at Heights Refresher

Who should attend

The course is intended for personnel who will be working in the wind industry or related fields and will have their duties in a wind turbine environment. , including personnel needing to refresh their GWO BST/BSTR Working at Height Module . Personnel that may need or is selected to perform advanced rescue or lead an advanced rescue operation, where GWO Advanced Rescue Training may mitigate the identified risks. The course is applicable for personnel working in SGRE WTG Zone 2, 2A and 4 - according to valid Rescue Preparedness Procedures.

Objectives

- Assess and determine rescue strategy (relevant rescue method, technique, certified equipment, and required personnel) for various rescue scenarios in a WTG
- Assess and determine evacuation strategy during a rescue operation, attending to a clear and preferred evacuation route for the injured person outside or inside the tower. Apply rescue methods and techniques in performing descending and ascending rescue operations in a WTG – as a rescue team coordinator, team member and single rescuer
- Apply cervical collar, rescue stretcher, spine board, manually and power-driven lowering/raising rescue system (rescue device, pulley system or similar)
- Perform clear and precise communication during the rescue operation, and apply guidance to other emergency responders coordinating the handover of an injured person Explain and control common risks of hazardous energies and common hazards of enclosed space areas, when performing rescue operations in a WTG
- Explain national and local requirements and/or procedures for helicopter rescue in a WTG

Technician

Validity period
2 years

3 days

UK, DE,US

Language	**EN**
Theory (%) / practice (%)	**15/ 85**
On site	**yes**

SE-P-50185

GWO ART Hub, Spinner & inside Blade Refresher

Purpose

The aim of the course is to enable the delegates to perform rescue operations inside a WTG hub, spinner and blade, in teams, by using industry standard rescue equipment, methods and techniques, exceeding those of GWO Working at Height.

Who should attend

The course is intended for personnel who will be working in the wind industry or related fields and will have their duties in a wind turbine environment. Personnel that may need or is selected to perform advanced rescue or lead an advanced rescue operation, where training according to one or more modules of the GWO Advanced Rescue Training may mitigate the identified risks. The course is applicable for SGRE Employees working in SGRE WTG Zone 2, 2A and 4 - according to current Rescue Preparedness Procedures.

Objectives

- Assess and determine rescue strategy (relevant rescue method, technique, certified equipment, and required personnel) for various rescue scenarios in a WTG hub, spinner and inside a blade
- Assess and determine evacuation strategy during a rescue operation, attending to a clear and preferred evacuation route for the injured person outside or inside the tower
- Apply rescue methods and techniques in performing descending and ascending rescue operations, from a WTG hub, spinner and inside a blade
- Apply cervical collar, rescue stretcher, spine board, and manually driven lowering/raising rescue system (rescue device, pulley system or similar)
- Perform clear and precise communication during the rescue operation, and apply guidance to other emergency responders coordinating the handover of an injured person
- Explain and control common risks of hazardous energies and common hazards of enclosed space areas, when performing rescue operations in a WTG

Technician

Validity period
2 years

1 day

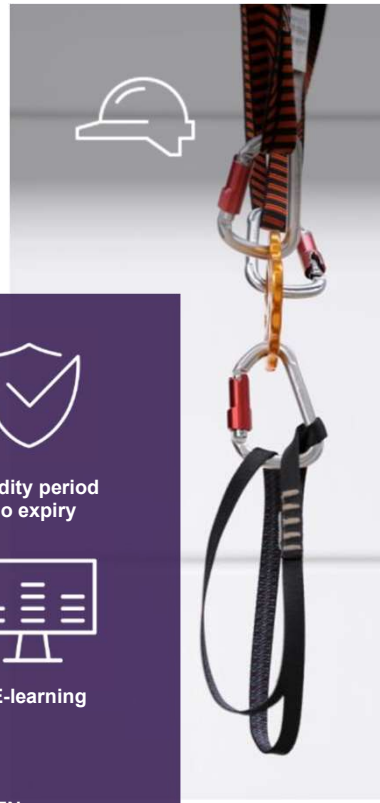
UK, DE, US

Language	**EN**
Theory (%) / practice (%)	**15/ 85**
On site	**yes**

SIEMENS Gamesa
RENEWABLE ENERGY

Training SE-P-85695

Introduction to Lifting Bags



Purpose

This e-learning will allow Participants to increase or refresh their knowledge on lifting bags used at Siemens Gamesa. This e-learning aims to provide Participants knowledge of correct selection of lifting bags for the intended purpose, inspection of lifting bags as well as the correct and safe use with the common goal of reducing the risk of unsafe work.

Who should attend

Mandatory:
All employees that need to lift objects using cranes and lifting devices while working in WTG's at Siemens Gamesa.
Optional:
All others that would like to enhance their knowledge about use, inspection and legislation on lifting bags at Siemens Gamesa.

Objectives

After completing this e-learning, participants should have gained knowledge on use, legislation correct selection and inspection of lifting bags at Siemens Gamesa Renewables:

- Why lifting bags are used;
- Siemens Gamesa requirements for use of lifting bags and consideration of specific local legislation;
- Types of lifting bags used at SGRE;
- Selecting the correct lifting bag for the job;
- Correct pre-use inspection of lifting bags;
- Correct and safe use of lifting bags.

Technician

Validity period
No expiry

20 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-10150

Advanced First Aid (DGUV)

Technician

Validity period
1 year

3 days

DE

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Purpose

The purpose of this course is, by theoretical and practical training to give delegates skills and competencies to act as advanced first aiders with the extended skills and tools available to treat a casualty in the prolonged time until transportation to onshore facilities and professional medical support is available.

Who should attend

Personnel working in the German sector offshore (EEZ).

Objectives

Upon completion of the course the Delegates are able to demonstrate their knowledge and skills according to Advanced First Aid (DGUV).

American Red Cross First Aid/CPR/AED

Technician

Validity period
2 years

4 hours

US

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	-------

Purpose

The purpose of this course is, by theoretical and practical training to give delegates skills and competencies to act as advanced first aiders with the extended skills and tools available to treat a casualty in the prolonged time until transportation to onshore facilities and professional medical support is available.

Who should attend

Wind technicians, ground support personnel, and any others that may need First Aid/AED/CPR training.

Objectives

Before Giving Care and Checking an Injured or Ill Person -Describe how to recognize an emergency. - Describe how to prioritize care for injuries and sudden illnesses. - Describe the purpose of Good Samaritan laws. - Identify the difference between (expressed) consent and implied consent. - Identify how to reduce the risk of disease transmission when giving care. - Explain how to activate and work with the emergency medical services (EMS) system. - Explain when to move an injured or ill person from a dangerous scene. - Explain how to check a conscious person for life-threatening and non-lifethreatening conditions. - Identify the signals of shock. - Describe how to minimize the effects of shock. - Demonstrate how to check an unconscious person for life-threatening conditions. CPR/AED - Recognize the signals of a cardiac emergency. - Identify the links in the Cardiac Chain of Survival. - Describe how to care for a heart attack. - List the causes of cardiac arrest. - Explain the role of CPR in cardiac arrest. - Demonstrate how to perform CPR. - Recognize the signals of a breathing emergency. - Demonstrate how to care for a person who is choking. - Explain what defibrillation is. - Explain how defibrillation works. - Identify precautions to take when using an AED on a person in sudden cardiac arrest. - Demonstrate how to use an AED. First Aid - Identify the signals of common sudden illnesses. - Describe how to care for common sudden illnesses. - Describe how to care for someone who is having a seizure. - Identify the signals of heat-related illnesses and cold-related emergencies. - Describe how to care for heat-related illnesses and cold-related emergencies. - Explain how to care for head, neck and spinal injuries. - Identify signals of various soft tissue and musculoskeletal injuries. - Describe how to care for various soft tissue and musculoskeletal injuries.

Training SE-P-04100

CCNSG Safety Passport

Technician

Validity period 3 years

2 days

UK

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**yes**

Purpose

To provide the participants with a current CCNSG safety passport.

Who should attend

The training is addressed for all Siemens Gamesa employees, who require knowledge and training in basic site safety in order for them to work safely at their work locations.

Objectives

Knowledge:

- Lifting and work equipment regulations;
- Safe behavior and safe workplace;
- Confined space entry, excavations;
- Permit to work systems;
- Working at heights safely;
- Site transport, environmental protection;
- Safe lifting and manual handling;
- Asbestos, hazardous substances;
- Electricity, isolation, hand-arm vibration, noise;
- Current UK health and safety legislation.

Training SE-P-04150

CCNSG Safety Passport Refresher

Purpose
To provide the participants with a current CCNSG safety passport.

Who should attend
The training is addressed for all Siemens Gamesa employees who require knowledge and training in basic site safety in order for them to work safely at their work locations.

Objectives
Knowledge:
- Lifting and work equipment regulations;
- Safe behavior and safe workplace;
- Confined space entry, excavations;
- Permit to work systems;
- Working at heights safely;
- Site transport, environmental protection;
- Safe lifting and manual handling;
- Asbestos, hazardous substances;
- Electricity, isolation, hand-arm vibration, noise;
- Current UK health and safety legislation.

Technician

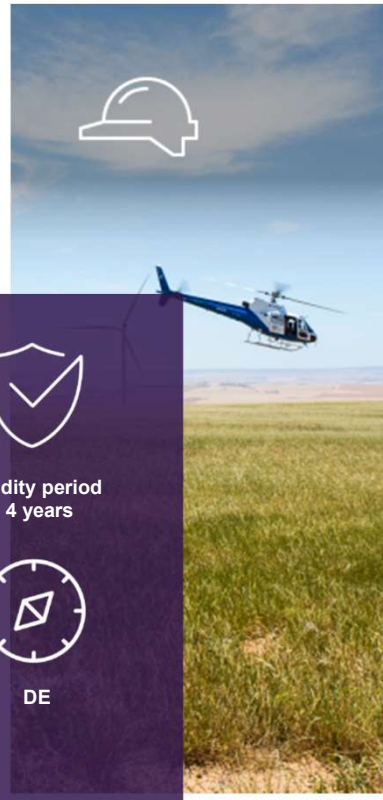
Validity period 2 years

8 hours

UK

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**yes**

Helicopter Underwater Escape Training (HUET)



Purpose
The main objective of this training is to introduce all aspects of helicopter transfer and emergency procedures for passengers transferring to and from offshore wind turbines and sites.

Who should attend
This training is aimed at personnel travelling as passengers in a helicopter to and from an offshore marine facility.

Objectives
Knowledge and skills:
- Pre-boarding, safe boarding, in-flight and safe disembarkation procedures;
- Donning a transit type survival suit, aviation lifejacket and Emergency Breathing System Equipment (EBS);
- Operation and use of Emergency Breathing System Equipment;
- Preparation for a helicopter ditch and emergency landing.

Technician

Validity period 4 years

8 hours

DE

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-42675

OPITO Compressed Air Emergency Breathing System (CA-EBS)

Purpose

To ensure personnel working in the Oil & Gas industry, using helicopter as a means of transportation, are fully trained in Category A Emergency Breathing System so they can react safely in an emergency situation onboard a helicopter.

Who should attend

Anyone who currently working or intending to work offshore.

Objectives

The aims and objectives of the training are to ensure that the delegate gains the required knowledge and understanding of the particular hazards and properties of a Compressed Air Emergency Breathing System (CA-EBS) and appropriate practical emergency response actions to take should the requirement for emergency deployment arise.

Knowledge:

- The fundamental differences between re-breather and compressed air systems;
- The rationale and use of compressed air emergency breathing systems in helicopter emergency situations;
- The hazards associated with compressed air emergency breathing systems;
- A pre-flight inspection of the lifejacket and CA-EBS;
- Donning the lifejacket with CA-EBS correctly, including 'buddy check';
- An emergency deployment of the CA-EBS in a dry environment.

Technician

Validity period
No expiry

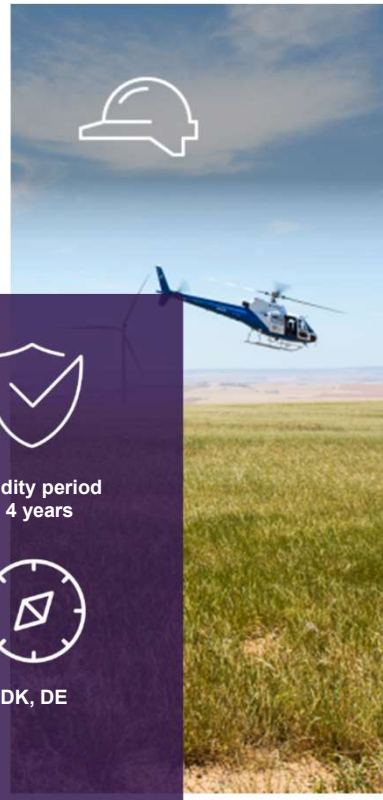
1.5 hours

DK

Language	**EN**
Theory (%) / practice (%)	**40/ 60**
On site	**yes**

Training SE-P-04735

Helicopter Underwater Escape Training (HUET) with OPITO CA-EBS



Purpose

The aim of the HUET with CA-EBS course is to prepare the participants that intend to travel to and from offshore wind turbines and sites by helicopter by providing specific training in pre-flight and in-flight requirements and to equip participants with the basic emergency response knowledge and skills required in the event of a helicopter emergency – with specific focus on escaping from a helicopter following ditching.

Who should attend

This training is aimed at personnel travelling as passengers in a helicopter to and from offshore wind turbines and sites.

Objectives

Knowledge and skills:

To give the participants sufficient knowledge about the challenges in relation with an emergency landing on the water and preventive actions and preparations necessary in such situations, enabling them to handle and behave correct, that includes:

- Procedure training
- Push out window operation
- CA-EBS familiarization and use
- Suit buoyance challenges and knowledge
- Handling aviation life rat

Technician

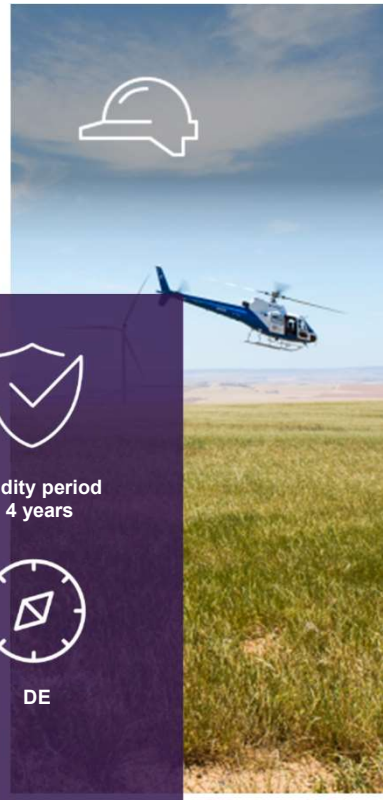
Validity period 4 years

8 hours

DK, DE

Language	**EN, DK**
Theory (%) / practice (%)	**60/ 40**
On site	**No**

Helicopter Underwater Escape Training (HUET)



Purpose
The main objective of this training is to introduce all aspects of helicopter transfer and emergency procedures for passengers transferring to and from offshore wind turbines and sites.

Who should attend
This training is aimed at personnel travelling as passengers in a helicopter to and from an offshore marine facility.

Objectives
Knowledge and skills:
- Pre-boarding, safe boarding, in-flight and safe disembarkation procedures;
- Donning a transit type survival suit, aviation lifejacket and Emergency Breathing System Equipment (EBS);
- Operation and use of Emergency Breathing System Equipment;
- Preparation for a helicopter ditch and emergency landing.

Technician

Validity period 4 years

8 hours

DE

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-86010

TMSE International Safety Standards

Purpose

The purpose of the course is, through theory, to give the participants the necessary knowledge, to proceed with the product specific e-learnings in inspection of the Turbine Mounted Safety Equipment, in Siemens Gamesa Wind Turbine Generators.

Who should attend

The course is addressed to people who have to inspect Turbine Mounted Safety Equipment.

Objectives

Knowledge:

- ANSI Standards;
- OSHS Regulations;
- CSA Standards;
- CE/EN Standards;
- In which countries and regulations the above regulations and standards apply.

Competencies

Upon successful completion of this course the participants are qualified to continue with the product specific courses in the TMSE inspection curriculum.

Technician

Validity period 2 years

15 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-86490

TMSE Anchor Points – inspection

Technician

Validity period 2 years

30 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Purpose

The purpose of this course is to enable the participant to acquire the competence to perform a periodic inspection of Anchor Points.

Who should attend

All personnel with the task of performing the periodic inspection of Anchor Points.

Objectives

The learning objective of this course is to enable the participant to be competent in performing the periodic inspection of anchor points used e. g. in wind turbines, production and handling areas and in training facilities. Upon completion of this course the participant is competent to perform the periodic inspection of anchor points. This includes:

- Knowledge of the legal requirements related to the use of the device;
- Ability to recognize different types of anchor points;
- Knowledge of the steps used when inspecting an anchor point and the capability of using the knowledge;
- Identify the meaning and use of markings for specific anchor points;
- How to use Work Instructions (ZWI) as reference for inspection;
- How to use Inspection sheets and Check Lists (ZCH) and the data logging system.

Training SE-P-85850

SGST WAH Milan A-029

Purpose

This GWO GAP training course will enable participants to learn the form, function and use of the Skylotec Milan A-029 prior to receiving GWO Refresher training, which will include education in the Skylotec Milan A-029.

Who should attend

Mandatory for Siemens Gamesa employees that have only received training for the Skylotec Milan A-020 and A-024.

Objectives

Knowledge:

- Participants will be able to describe the similarities and differences of the Skyotec Milan Hub A-024 and the new Skylotec Milan A-029
- Participants will be able to recognize the similarities and differences of the Skyotec Milan Hub A-024 and the new Skylotec Milan A-029

Skills:

- Participants will be able to simulate the use of the use of the new Skylotec Milan A-029 braking track and bull horn;
- Participants will be able to summarize the use of the use of the new Skylotec Milan A-029 braking track and bull horn;
- Participants will be able to identify how the new Skylotec Milan A-029 differs in use from the Skylotec Milan A-024.

Technician

Validity period 2 years

15 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-02502

TMSE Competent Person – installation and inspection

Purpose

The aim of this course is to qualify the participant to be a Competent Person for installation, maintenance and periodical inspection of Turbine Mounted Safety Equipment (TMSE) according to international standards and national legal requirements. This includes WTG, assembling areas and training centers.

Who should attend

The course is intended for personnel who have to install, inspect, maintain or replace parts of turbine mounted safety equipment; systems and/or products mentioned in the Competencies section.

Objectives

Knowledge:

- International Safety Standards
- Legislation
- Manufacturers' manuals, work instructions (ZWI) and checklists (ZCH)
- Risks and hazards of dropping objects related to installation and inspection of TMSE, and how to mitigate it

Skills:

- Miller Falcon Self-Retracting Lifeline (SRL)
- Siemens Gamesa Rescue kit with Basket Stretcher and Spec Pak Rescue kit
- Skylotec Seal Pac (Milan)
- Immersion Suits for evacuation
- Install, inspect, maintain and replace broken parts on:

- ICM vertical fall protection system
- Sala Lad-Saf fall protection system
- Söll GlideLoc fall protection system
- Avanti and Stilo ladders

- Install (fit and replace) and inspect SGRE TMSE anchor points
- Use washers and mechanical (non-electrical) torque wrenches correctly in accordance with safety and technical instructions in SGRE manuals
- Use current and matching work instructions (ZWI) and inspection checklists (ZCH) as well as up to date manufacturer's installation manuals

Competencies

- Competent Person - ICM vertical fall protection system
- Competent Person - Sala Lad-Saf fall protection system
- Competent Person - Söll GlideLoc fall protection system
- Competent Person - Avanti and Stilo ladders
- Competent Person - Miller Falcon Self-Retracting Lifeline (SRL)
- Competent Person - Siemens Gamesa Rescue kit, Basket stretcher, Spec Pak
- Competent Person - Anchor Points used in Siemens Gamesa WTG and WTG environment (assembly and training)
- Competent Person - Skylotec Seal Pac (Milan)
- Competent Person - Immersion Suit, for evacuation

Technician

Validity period 2 years

2 days

DK, DE, UK, US

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-02550

Competent Person Personal Fall Protection Equipment (PFPE)

Purpose

The purpose of the course is, through theoretical and practical education, to give the participants the necessary skills, to inspect, control, change broken parts and recertify PFPE.

Who should attend

The course is addressed to people who have to inspect and control Personal Fall Protection Equipment.

Objectives

Knowledge:

- Types of harnesses;
- Types of Manyards / Landyards;
- Types of gliders;
- User manuals;
- Cleaning and maintenance.

Competencies

- Competent Person - different types of Miller harnesses;
- Competent Person - fall arrester Manyards;
- Competent Person - work positioning Lanyards;
- Competent Person - Cabloc, Sala and Söll gliders.

Technician

Validity period 2 years

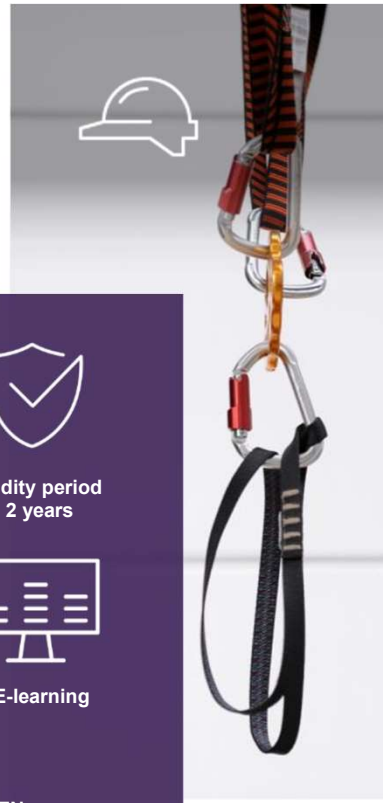
2 days

DK, US

Language	**EN**
Theory (%) / practice (%)	**75/ 25**
On site	**yes**

Training SE-P-50060

SGST WAH Söll guiderail and GlideLoc Universal II



Purpose

The aims of this course are to educate the participants, holding valid GWO BST Working at Heights certificate, in the specific equipment used in Siemens Gamesa through theoretical training to use basic fall protective equipment, to perform safe work at heights in a remote wind turbine environment - in accordance with GWO BST Module Working at Heights.

Who should attend

The training is mandatory to personnel working in Siemens Gamesa Wind Turbine generators who have not been trained in the use of Söll GlideLoc Fall Arrest System with Söll Universal II Wind.

Objectives

Knowledge:

In the technical specifications as:

- Maximum load;
- No alterations or extensions are allowed.

In inspection knows how to check:

- Calibration sticker for inspection period;
- Glider is free of contamination;
- Integrity of Glider;
- Presence of metal ball inside Glider;
- Flat spots on rollers on Glider.

In the use ensures:

- To check the Glider stops when testing it.

Competencies

Upon successful completion of this course the participants are qualified to climb a ladder with Söll GlideLoc Fall Arrest System and Söll Universal II Wind in Siemens Gamesa Wind Turbine Generators.

Technician

Validity period 2 years

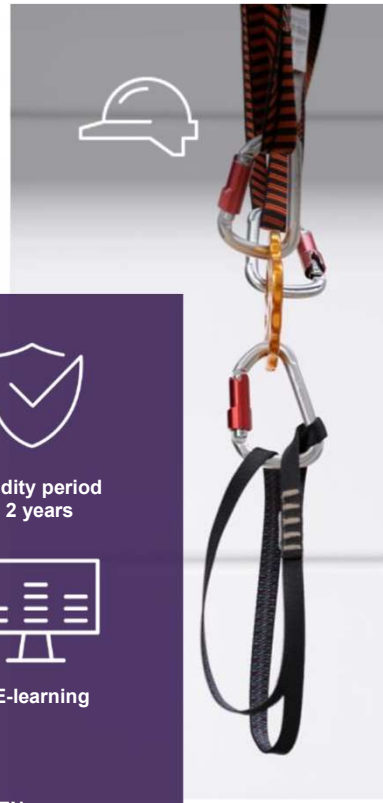
10 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-50070

SGST WAH ICM Vertical Fall Arrest and CABloc



Purpose

The aim of this course is to give the participants the necessary basic knowledge in inspection and use, of the ICM Cable with CABloc AC350/4, through a theoretical training. This is a supplement to GWO BST module Working at Heights.

Who should attend

The training is mandatory to personnel working in Siemens Gamesa Wind Turbine generators who have not been trained in the use of ICM Cable with CABloc AC350/4.

Objectives

Knowledge:

In the technical specifications as:

- Follows CE approval;
- Maximum load;
- No alterations or extensions are allowed.

In inspection knows how to check:

- Calibration sticker for inspection period;
- That Cable Sleeve is free of contamination;
- The integrity of the Cable Sleeve;
- Function of the spring in the cable grab.

In the use ensures:

- To check the CABloc stops when testing it.

Competencies

Upon successful completion of this course the participants are qualified to climb a ladder ICM Cable and CABloc AC350/4in Siemens Gamesa Wind Turbine Generators.

Technician

Validity period 2 years

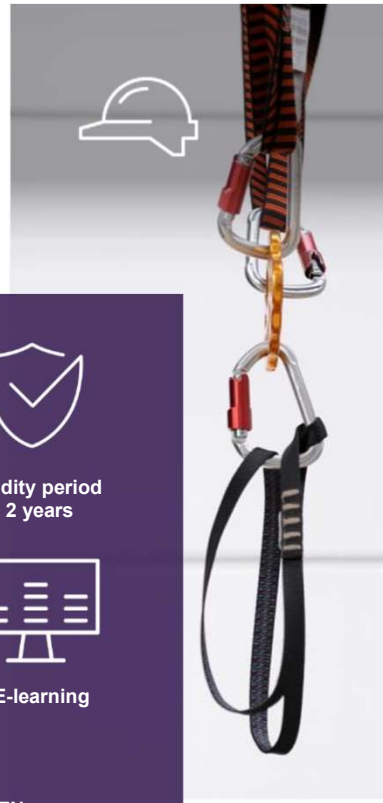
10 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-50080

SGST WAH SALA LadSaf and Cable Sleeve



Purpose

The aim of this course is to give the participants the necessary basic knowledge in inspection and use, of the Sala LadSaf Flexible Cable Ladder Safety System with LadSaf Detachable Cable Sleeve, through a theoretical training. This is a supplement to GWO BST module Working at Heights.

Who should attend

The training is mandatory to personnel working in Siemens Gamesa Wind Turbine generators who have not been trained in the use of Sala LadSaf Flexible Cable Ladder Safety System with LadSaf Detachable Cable Sleeve.

Objectives

Knowledge:

In the technical specifications as:

- Follows ANSI regulations;
- Maximum load;
- No alterations or extensions are allowed.

In inspection knows how to check:

- Calibration sticker for inspection period;
- That Cable Sleeve is free of contamination;
- The integrity of the Cable Sleeve;
- Presence of gravity stop on the right side of the Cable Sleeve.

In the use ensures:

- To check the Cable Sleeve stops when testing it.

Competencies

Upon successful completion of this course the participants are qualified to climb a ladder with Sala LadSaf Flexible Cable Ladder Safety System and LadSaf Detachable Cable Sleeve in Siemens Gamesa Wind Turbine Generators.

Technician

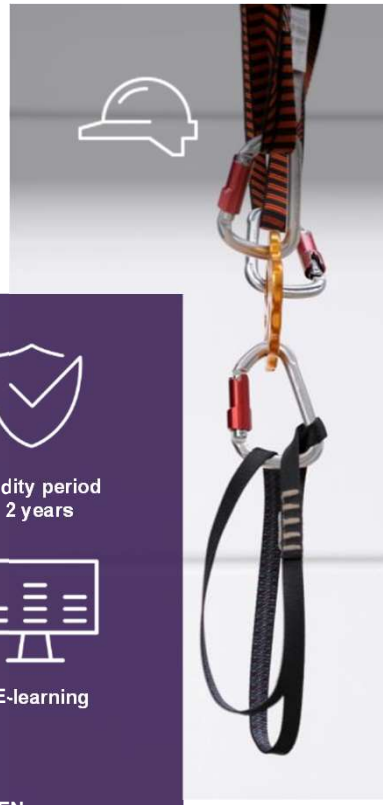
Validity period 2 years

10 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

SGST WAH Milan A-024



Purpose
The aim of this course is to give the participants the necessary basic knowledge in the use, of the Descending- and Rescue-Device with Rescue Winch AGR 2001 "Milan hub" (Milan A-024), through a theoretical training. This is a supplement to GWO BST module Working at Heights.

Who should attend
The training is mandatory to personnel working in Siemens Gamesa Wind Turbine generators who have not been trained in the use of Descending- and Rescue-Device with Rescue Winch AGR 2001 "Milan hub" (Milan A-024).

Objectives
Knowledge:
In the technical specifications as:
- Worldwide approved;
- Maximum service period;
- Maximum load;
- Descend length / load.

In case of use:
- Knows what the content of a Seal Pac is;
- Knows what the function of the rope grab is;
- Don the Milan to an anchor point.

Competencies
Upon successful completion of this course the participants are qualified to use the Descending- and Rescue-Device with Rescue Winch AGR 2001 "Milan hub" (Milan A-024) in Siemens Gamesa Wind Turbine Generators.

Technician

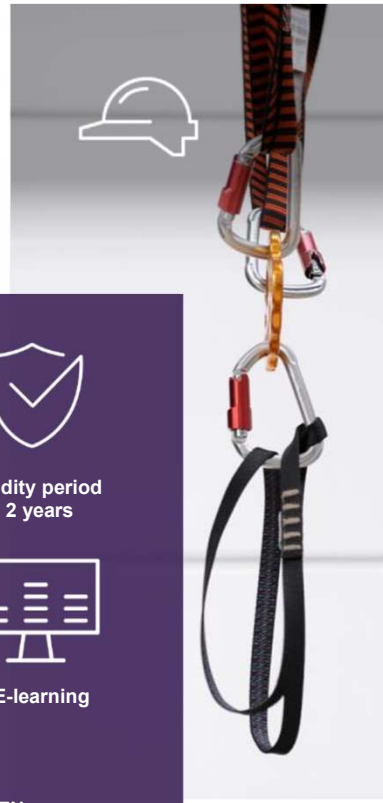
Validity period
2 years

10 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

SGST WAH Milan A-020



Purpose

The aim of this course is to give the participants the necessary basic knowledge in the use, of the Descending- and Rescue-Device AGR 2001 "Milan" (Milan A-020), through a theoretical training. This is a supplement to GWO BST module Working at Heights.

Who should attend

The training is mandatory to personnel working in Siemens Gamesa Wind Turbine generators who have not been trained in the use of Descending- and Rescue-Device AGR 2001 "Milan" (Milan A-020).

Objectives

Knowledge:

In the technical specifications as:

- Worldwide approved;
- Maximum service period;
- Maximum load;
- Descend length / load.

In case of use:

- Don the Milan to an approved anchor point.

Competencies

Upon successful completion of this course the participants are qualified to use the Descending- and Rescue-Device AGR 2001 "Milan" (Milan A-020) in Siemens Gamesa Wind Turbine Generators.

Technician

Validity period 2 years

10 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-86040

TMSE Rescue kit, Basket Stretcher & Spec Pak - inspection

Technician

Validity period
2 years

25 minutes

E-learning

Language	EN
Theory (%) / practice (%)	100/ 0
On site	no

Purpose

The purpose of the course is, through theoretic, to give the participants the necessary knowledge, to inspect and recertify Siemens Rescue Kit, Basket Stretcher and Spec Pak kit.

Who should attend

The course is addressed to people who have to inspect Siemens Rescue Kit, Basket Stretcher and Spec Pak kit.

Objectives

Knowledge:

- Specifications of Siemens Rescue Kit;
- Specifications of Basket Stretcher;
- Specifications of Spec Pak;
- Statutory inspection of Siemens Rescue Kit;
- Statutory inspection of Basket Stretcher;
- Statutory inspection of Spec Pak;
- What to do in case of a failed inspection;
- Recertify Siemens Rescue Kit according to regional requirements;
- Recertify Basket Stretcher Kit according to regional requirements;
- Recertify Siemens Spec Pak Kit according to regional requirements.

Competencies

Upon successful completion of this course the participants are qualified to conduct statutory inspection and recertify Siemens Gamesa Rescue Kit, Basket Stretcher and Spec Pak kit.

Training SE-P-86050

TMSE ICM Vertical Fall Arrest – inspection

Technician

Validity period
2 years

20 minutes

E-learning

Language	EN
Theory (%) / practice (%)	100/ 0
On site	no

Purpose

The purpose of the course is, through theoretic, to give the participants the necessary knowledge, to inspect and recertify ICM Vertical Fall Arrest System, mounted in Siemens Gamesa Wind Turbine Generators.

Who should attend

The course is addressed to people who have to inspect ICM Vertical Fall Arrest System.

Objectives

Knowledge:

- Specifications of ICM Vertical Fall Arrest System;
- Statutory inspection of ICM Vertical Fall Arrest System;
- What to do in case of a failed inspection;
- Recertify ICM Vertical Fall Arrest System according to regional requirements.

Competencies

Upon successful completion of this course the participants are qualified to conduct statutory inspection and recertify ICM Vertical Fall Arrest System, mounted in Siemens Gamesa Wind Turbine Generators.

Training SE-P-86060

TMSE SALA LadSaf Cable System - inspection

Purpose
The purpose of the course is, through theoretic, to give the participants the necessary knowledge, to inspect and recertify Sala LadSaf Cable System, mounted in Siemens Gamesa Wind Turbine Generators.

Who should attend
The course is addressed to people who have to inspect Sala LadSaf Cable System.

Objectives
Knowledge:
- Specifications of Sala LadSaf Cable System;
- Statutory inspection of Sala LadSaf Cable System;
- What to do in case of a failed inspection;
- Recertify Sala LadSaf Cable System according to regional requirements.

Competencies
Upon successful completion of this course the participants are qualified to conduct statutory inspection and recertify Sala LadSaf Cable System, mounted in Siemens Gamesa Wind Turbine Generators.

Technician

Validity period 2 years

20 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-86070

TMSE Söll Glideloc Fall Protection - inspection

Purpose
The purpose of the course is, through theoretic, to give the participants the necessary knowledge, to inspect and recertify Söll Glideloc Fall Protection System, mounted in Siemens Gamesa Wind Turbine Generators.

Who should attend
The course is addressed to people who have to inspect Söll Glideloc Fall Protection System.

Objectives
Knowledge:
- Specifications of Söll Glideloc Fall Protection System;
- Statutory inspection of Söll Glideloc Fall Protection System;
- What to do in case of a failed inspection;
- Recertify Söll Glideloc Fall Protection System according to regional requirements.

Competencies
Upon successful completion of this course the participants are qualified to conduct statutory inspection and recertify Söll Glideloc Fall Protection System, mounted in Siemens Gamesa Wind Turbine Generators.

Technician

Validity period 2 years

20 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-86080

TMSE Skylotec Seal Pac – inspection

Purpose
The purpose of the course is to give the participants the necessary knowledge to inspect and Recertify the Skylotec Seal Pac and the Immersion Suits for evacuation mounted in Siemens Gamesa Renewable Energy Wind Turbine Generators.

Who should attend
The course is addressed to people who have to inspect Skylotec Seal Pac and the Immersion Suit for Evacuation.

Objectives
- Describe the specifications of Skylotec Seal Pac;
- Perform a statutory inspection of Skylotec Seal Pac;
- Recertify and perform lifetime extension, from 6 to 10 years, on Skylotec Seal Pac according to regional requirements;
- Perform a statutory inspection of the Immersion Suit for evacuation;
- Explain what to do in case of a failed inspection.

Competencies
Upon successful completion of this course the participants are qualified to conduct statutory inspection, recertify and perform lifetime extension on Skylotec Seal Pac, mounted in Siemens Gamesa Wind Turbine Generators.

Technician

Validity period 2 years

15 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-86030

TMSE Miller Falcon Lanyard – inspection

Purpose
The purpose of the course is, through theoretic, to give the participants the necessary knowledge, to inspect and recertify Miller Falcon Self-retractable Lanyard.

Who should attend
The course is addressed to people who have to inspect Miller Falcon Self-retractable Lanyards.

Objectives
Knowledge:
- Specifications of Miller Falcon Self-retractable Lanyard;
- Statutory inspection of Miller Falcon Self-retractable Lanyard;
- What to do in case of a failed inspection;
- Recertify Miller Falcon Self-retractable Lanyards according to regional requirements.

Competencies
Upon successful completion of this course the participants are qualified to conduct statutory inspection and recertify Miller Falcon Self-retractable Lanyards.
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Technician

Validity period 2 years

15 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-86020

TMSE Avanti & Stilo Ladders – inspection

Purpose
The purpose of the course is, through theoretic, to give the participants the necessary knowledge, to inspect and recertify Avanti and Stilo Ladders mounted as safety equipment in turbines.

Who should attend
The course is addressed to people who have to inspect the Avanti and Stilo ladders, mounted as safety equipment in turbines.

Objectives
Knowledge:
- Specifications of the Avanti ladder;
- Specifications of the Stilo ladder;
- Statutory inspection of the ladders;
- What to do in case of a failed inspection;
- Recertify the ladders according to regional requirements.

Competencies
Upon successful completion of this course the participants are qualified to conduct statutory inspection and recertify the Avanti and Stilo ladders mounted in Siemens Gamesa Wind Turbine Generators.

Technician

Validity period 2 years

15 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-14000

Rollgliss R350

Purpose
The training is developed to provide Siemens Gamesa employees as well as third party technicians a safer and more ergonomic tool, when performing e.g. cable work in the tower or work on top of the spinner.

Who should attend
The training is intended for Siemens Gamesa employees, customers and 3rd parties. The training is addressed to individuals who are performing wind turbine erection or service.

Objectives
Knowledge and skills:
- Safe and correct use of Rollgliss R350 system in combination with Boatswains chair;
- How to setup the Rollgliss with different interchanges;
- Allowable loads for the various usages.

Competencies
After training the participants will be qualified to work with both Rollgliss R350 system and Boatswains chair.

Technician

Validity period 2 years

8 hours

DK, UK, US

Language	**EN**
Theory (%) / practice (%)	**25/ 75**
On site	**yes**

Authorized Climber and Rescuer

Purpose

The purpose of the course is to give the participants the necessary basic knowledge and skills to become authorized climbers and authorized rescuers. Participants will learn to use basic fall protective equipment, to perform safe work at heights, safe emergency decent and safe and comprehensive basic rescue from heights in the general industry. Participants will understand the mechanics and performance of each piece of equipment they are required to use on the job. The equipment is a tool, and the training is focused on how to use the tools safely and efficiently.

Who should attend

Personnel working in industries that require work at heights, looking to obtain the proper certifications to enable safe and efficient climbing. Workers that are engaged in erecting, servicing, constructing or maintaining communication towers or similar structures, outside of the Wind Industry.

Objectives

Knowledge:

- Identify the ANSI Standard most relevant to work at heights;
- Recall the degree of maximum angles permitted on SRLs;
- Recall the appropriate uses for a horizontal lifeline;
- Calculate clearance requirements;
- Recognize the difference between heat fatigue and heat stroke.

Skills:

- Locate safety labels and documentation on harnesses, energy absorbing lanyards, work positioning lanyards and self-retractable lines;
- Demonstrate proper user inspections on harnesses, energy absorbing lanyards, work positioning lanyards and self-retractable lines;
- Demonstrate proper use, management, and control of harnesses, energy absorbing lanyards, work positioning lanyards and self-retractable lines while ascending and descending the ladder;
- Demonstrate a safe and correct rescue situation;
- Assist in the rescue of an incapacitated worker.

Competencies

- Authorized Climbers and Authorized Rescuers following the standard set by the National Association of Tower Erectors;
- Students will become capable of performing self-rescues and assisting a Competent Rescuer with pre-assigned rescue tasks.

Technician

Validity period
2 years

2 days

US

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-05125

OSHA-10

Technician

Validity period
No expiry

10 hours

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Purpose

General Industry (Service): The 10-hour General Industry Outreach Training Program is intended to provide an entry level worker's general awareness on recognizing and preventing hazards in a general industry setting.
Construction (New Unit): The OSHA 10 Hour Construction Industry Outreach Training Program is intended to provide an entry level construction worker's general awareness on recognizing and preventing hazards on a construction site.

Who should attend

Entry level service and construction workers.

Objectives

- Explain the importance of OSHA in providing a safe and healthful workplace;
- Identify common hazards associated with walking and working surfaces and employer requirements regarding walking and working surfaces;
- Identify proper exit routes, list fire hazards and ways to prevent fires, and describe emergency action plans;
- Recognize electrical hazards and adhere to OSHA standards regarding workplace accidents, injuries, and fatalities;
- Personal Protective Equipment;
- Hazard Communication;
- Material Handling;
- Machine Guarding Safety;
- Blood borne Pathogens;
- Final Exam.

Training SE-P-86270

Wind Turbine Safety Rules

Purpose

This course is designed as a SGRE bolt on to the Ren-UK Wind Turbine Safety Rules course. This course will cover SGRE specific procedures and paperwork.

Who should attend

This course is designed for colleagues who need to work under the Wind Turbine Safety Rules in the UK &I.

Objectives

- To provide theoretical training in Siemens Wind Turbine Safety Rules (WTSR);
- Ensure course candidates have an understanding of Siemens WTSR, Approved Written Procedures (AWPs) & Routine Operating Procedures (ROP's).

Competencies

- Demonstrate understanding of Siemens Wind Turbine Safety Rules;
- Pass the course test to the required standard.

Technician

Validity period
No expiry

4 hours

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-05150

Rigging Safety

Technician

Validity period
No expiry

4 hours

US

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Purpose

The overall purpose of the course is to provide/verify the knowledge and skills necessary for all personnel employed by Siemens Gamesa Renewables Energy involved in basic rigging tasks commonly performed.

Who should attend

The course is intended for participants progressing through the Wind Service Training Center's (Orlando) New Hire program. Individuals new to the wind industry and contractor conversions alike will participate in the course.

Objectives

- Perform pre-use inspections on 4-way, synthetic slings, wire ropes, chains, lifting bags and shackles/pins;
- Understand proper use of angles and determining load weight;
- Demonstrate approved hand signals for rigging operations;
- Demonstration of rigging up typical load for service crew and performing lift with 4-way;
- Demonstration of rigging up Pitch Cylinder using Work Instruction as guidance.

Competencies

- Appropriate level of experience to inspect rigging for basic use;
- Ability to perform rigging and lifting practices specific to routine basic rigging procedures;
- Ability to perform proper rigging of pitch cylinders;
- Use of universally recognized hand signals for lifting procedures.

US Regional Safety Compliance Training

Purpose

Compliance with US federal law minimum training requirements, ensure all employees and contractors are aware of Siemens Gamesa Americas regional Local Specific Procedures and requirements such as LOTO, Confined space and PPE. This training covers the minimum job specific requirements of Occupational Safety and Health Administration (OSHA) such as Lock out/Tag out (LOTO), confined space and Local Specific Procedures addressing safety in the US.

Who should attend

All who will be working on or mingling with workers on any Siemens Gamesa site. This safety compliance training program is required for all technicians working in the US.

Objectives

Knowledge and skills:

- Reading and understanding a material safety data sheet (MSDS);
- Local requirements for operating forklifts and sky lifts;
- The importance of personal protection equipment (PPE) and the responsibilities related to use of PPE;
- The ability to complete Lock Out Tag Out & Confined space forms unassisted;
- Recognizing hazard associated with struck by & caught between hazards;
- Recognizing the hazards associated with hand and power tools and their responsibilities as the relate to tools;
- Safely conduct manual lifts such as carrying tools and parts to and form truck;
- Extreme temperature practices;
- Companies electrical safety policies and practices;
- Tailboards, JHAs, and current US Safety Alerts.

Competencies

US Regional Safety Compliance training certificate.

Technician

Validity period
No expiry

1.5 days

US

Language	**EN**
Theory (%) / practice (%)	**90/ 10**
On site	**yes**

Training SE-P-44705

Resilience and Human Performance Tools

Purpose
To provide participants with fundamental knowledge about the different resilience resources and tools available to enable safe and quality behaviors in human performance at all Siemens Gamesa Renewable Energy locations.

Who should attend
New Hires and Contractor Conversions about to commence work with SGRE.

Objectives
- Understand that the same behaviors drive both safety and quality and can be collectively influenced to create a mindset;
- Identify the fact that Error Likely Situations can be recognized and managed to reduce the likelihood of an incident;
- Recognize that individuals and the organization can learn to take resilient actions to Anticipate, Monitor, Respond and Learn from risks and error likely situations.

Competencies
Upon completion of this course all participants will have the basic knowledge to recognize and implement the use of the different resilience resources and tools throughout all SGRE - Region Americas.

Technician

Validity period
No expiry

2 hours

US

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-43820

Renewable UK Core Wind Turbine Safety Rules Training

Purpose

Provide theoretical and practical training in legislation, safety precautions, roles and responsibilities.

Who should attend

All groups requiring to become authorized under the RUK Wind Turbine Safety Rules.

Objectives

- To gain knowledge and show comprehension of RUK Wind Turbine Safety Rules core elements and how they are applied within the industry;
- Work safely within the guidelines of RUK Wind Turbine Safety Rules.

Technician

Validity period 3 years

8 hours

UK

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**yes**

Training SE-P-42025

Environmental Spill Kit Training

Technician

Validity period
No expiry

4 hours

UK

Language	**EN**
Theory (%) / practice (%)	**40/ 60**
On site	**yes**

Purpose

The course is aimed at all Siemens Gamesa employees who require knowledge and training in Environmental awareness and the prevention and control of spills in order for them to work safely at their work locations.

Who should attend

Siemens Gamesa employees.

Objectives

Knowledge and skills:

- Siemens Gamesa Process Procedure P09.1-246 Rev0: Pollution Prevention – Water;
- Environmental Awareness, Legislation and Compliance;
- Spillage Impact on the Environment and the Site;
- Health and Safety Implications;
- Causes of spills;
- Spill Prevention and control;
- Spill Kits;
- PPE;
- Spill Response, including Disposal of Used Spill Kit;
- Practical Session.

Training SE-P-05015

Region AM General Electrical Awareness Refresher (GEAR) e-learning

Purpose

Participants will review the necessary health and safety knowledge and skills to safely work around electrical systems and components. Participants will study the use of personal protective equipment, tools and procedures needed to perform safe work with electrical components in a wind turbine environment – all in accordance with Siemens Gamesa Renewable Energy regional and Internal regulations - EHS standards, INS 33147-Electrical Safe Work Practices, that support CSA Z462-15-17, NFPA 70E 110-130 and OSHA 29CFR1910 regulations..

Who should attend

The course is intended for Siemens Gamesa Renewable Energy employees, contractors and other authorized personnel in Region Americas including the Canada and USA.

Objectives

Upon successful completion of the course, the participants will be able to:

- Understand Region Americas Policies, Regulations and Procedures > Describe the roles and responsibilities at a workplace regarding electrical work
- Prepare in a safe manner for tasks related to work on and around electrical systems
- Identify tools and PPE required for safe work on or around electrical systems
- Understand the similarities and differences related to work on or around Low and Medium voltage systems

Technician

Validity period 1 year

80 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**no**

Training SE-P-05230

EHS Regional Compliance

Technician

Validity period
No expiry

6 hours

US

Language	**EN**
Theory (%) / practice (%)	**65/ 35**
On site	**yes**

Purpose

The overall purpose of this course is to provide participants with the knowledge and understanding of Region North America Environmental Health and Safety programs, standards, and practices.

Who should attend

The course is intended for SGRE employees, customers, and 3rd parties who perform tasks in SGRE Wind Turbines in Region North America.

Objectives

- Describe potential hazards and determine proper ways to mitigate risks;
- Complete a Pre-Task plan;
- Using PRO 18669, participants will be able to understand a risk assessment (Job Hazard Assessment);
- Using PRO 05 22 Ap. 4, participants will be able to: understand a hot work permit and identify all requirements for hot work;
- Using PRO 18914 and Global EIP tutorial, participants will be able to recognize, understand, and use an EIP on site;
- Using LSI 13730 and its appendixes, participants will be able to:
  - Identify the requirements of a permit and non-permit required confined space;
  - Demonstrate the calibration and use of the BW Technologies GasAlert Max XT II in a confined space and identify any potential hazards;
- Identifying types of energy and lines of fire, participants will be able to:
  - Recognize the different types of energy and match each with its corresponding hazards;
  - Define line of fire and recognize how it applies to working in a wind turbine and incident prevention;
- Using FORM 16808, participants will be able to identify purpose of at least 5 items contained within the Emergency Response Plan.

Competencies

Ability to work on a SGRE Wind Turbine with a Competent Person.

Training SE-P-44710

EHS Resilience Refresher Training

Purpose
Upon completion of this course employees will be able to demonstrate the use of Human Performance Tools, use of Resilience engineering management to Anticipate, Monitor, Respond and Learn to risks hazards associated with technicians, identification of loss-error likely situations.

Who should attend
Region Americas technicians.

Objectives
- Identify that human error is unavoidable but manageable
- Identify the fact that Error Likely Situations can be recognized and managed to reduce the likelihood of an incident
- Understand that the same behaviors drive both safety and quality and can be collectively influenced to create a culture
- Learn how to facilitate tools/systems to create the 3 aspects of a Resilient Culture (Fair, Reporting and Learning Cultures)
- Understand that individuals and the organization can learn to take resilient actions to Anticipate, Monitor, Respond and Learn from risks and error likely situations
- Understand the role each person plays in understanding Human Performance and how it can affect their work and others around them.
- Understand how to actively Anticipate, Monitor, Respond and Learn to varying situations in the workplace

Technician

Validity period
1 year

1 hour

US

Language	**EN**
Theory (%) / practice (%)	**80/ 20**
On site	**yes**

American Heart Association Heartsaver First Aid CPR AED

Purpose

Heartsaver First Aid CPR AED is a video-based, instructor-led course that teaches students critical skills needed to respond to and manage an emergency until emergency medical services arrives. Skills covered in this course include first aid; choking relief in adults, children, and infants; and what to do for sudden cardiac arrest in adults, children, and infants. This course teaches skills with the AHA's research-proven practice-while-watching technique, which allows instructors to observe the students, provide feedback, and guide the students' learning of skills.

Who should attend

Personnel working in the wind industry or related fields, who require First Aid certification.

Objectives

- List the priorities, roles, and responsibilities of first aid rescuers and describe the key steps in first aid;
- Remove protective gloves and find the problem;
- Describe the assessment and first aid actions for the following life-threatening conditions: heart attack, difficulty breathing, choking, severe bleeding, shock, and stroke;
- Describe when and how to help a choking adult or child;
- Demonstrate how to help a choking infant;
- Use an epinephrine pen, control bleeding and bandaging;
- Recognize elements of common injuries and describe how to find information on preventing illness and injury;
- Recognize the legal questions that apply to first aid rescuers;
- Describe how high-quality CPR improves survival;
- Explain the concepts of the Chain of Survival;
- Recognize when someone needs CPR and perform high-quality CPR for an adult;
- Give effective breaths using mouth-to-mouth or a mask for all age groups;
- Demonstrate how to use an AED on an adult;
- Perform high-quality CPR and AED for a child* and infant*;

Please Note: AHA is not equivalent to GWO First Aid or GWO First Aid Refresher and is not accepted globally. Any technician who is going to conduct work for offshore requires GWO First Aid.

Technician

Validity period
2 years

5 hours

US

Language	**EN**
Theory (%) / practice (%)	**/**
On site	**yes**

Training SE-P-12010

Safety & Product Familiarization Course

Purpose

The overall purpose of this course is to provide participants with the knowledge and understanding of Siemens Gamesa Renewable Energy (SGRE) business activities, and the Region Americas Environmental Health and Safety programs, standards, and practices.

Who should attend

The course is intended for Siemens Gamesa Renewable Energy employees, customers, and 3rd parties who perform tasks in SGRE Wind Turbines or support Wind Turbine functions.

Objectives

- Participants will be able to recall important facts about Siemens and Gamesa history and explain how those facts can impact the career of a Siemens Gamesa employee by the end of the module.
- Participants will be able to explain their overall contributions to a Siemens Gamesa Zero Harm Safety culture, and the role they play in the success of the culture by the end of the module.
- Participants will be able to outline the different EHS programs, describe important facts related to the programs, and illustrate their differences by the end of the module.
- Participants will be able to label and identify the different turbines manufactured and sold by Siemens Gamesa , their major components, as well as how the basic turbine functions by the end of the module.
- Participants will participate in several activities designed to expose them through the 3 week onboarding training program our wind technicians experience, to better understand the day to day activities of the business we support at SGRE

Competencies

Upon completion of the course, participants will have a basic introduction to the business activities encountered in normal day to day operations at SGRE.

Technician

Validity period
No expiry

8 hours

US

Language	**EN**
Theory (%) / practice (%)	**/**
On site	**yes**

75

Technician
Technical Trainings

Training SE-P-50410

GWO BTT Mechanical

Purpose
The overall purpose of the course is to give the participants the knowledge and skills to carry out basic mechanical tasks (supervised by an experienced technician), using safe working procedures and the correct PPE.

Who should attend
The Basic Technical Training modules are targeted at candidates who have no previous experience of hydraulic, mechanical or electrical systems but may also be used to up skill candidates who have some knowledge but not of their application in wind turbines.

Objectives
- Explain the main components, mechanical systems and the basic operation of wind turbines;
- Explain risks and hazards associated when working with mechanical systems;
- Understand the principles of bolted and welded connections and their inspection;
- Demonstrate practical skills to use manual tightening and measuring tools;
- Demonstrate the correct use of hydraulic torque and tensioning tools;
- Explain the principles of a gearbox;
- Explain the function of the brake systems and demonstrate how to inspect them;
- Explain the function of the yaw system and explain how to inspect it;
- Explain the function of the cooling system and demonstrate how to inspect it;
- Explain the function of the lubrication system and demonstrate how to inspect it.

Technician

Validity period
No expiry

1.5 days

DK,DE,UK,US,IN, BR

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-49410

SGRE BTT Mechanical

Technician

Validity period
No expiry

1.5 days

BR

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Purpose

The overall purpose of the course is to give the participants the knowledge and skills to carry out basic mechanical tasks (supervised by an experienced technician), using safe working procedures and the correct PPE.

Who should attend

The Basic Technical Training modules are targeted at candidates who have no previous experience of hydraulic, mechanical or electrical systems but may also be used to up skill candidates who have some knowledge but not of their application in wind turbines.

Objectives

- Explain the main components, mechanical systems and the basic operation of wind turbines;
- Explain risks and hazards associated when working with mechanical systems;
- Understand the principles of bolted and welded connections and their inspection;
- Demonstrate practical skills to use manual tightening and measuring tools;
- Demonstrate the correct use of hydraulic torque and tensioning tools;
- Explain the principles of a gearbox;
- Explain the function of the brake systems and demonstrate how to inspect them;
- Explain the function of the yaw system and explain how to inspect it;
- Explain the function of the cooling system and demonstrate how to inspect it;
- Explain the function of the lubrication system and demonstrate how to inspect it.

Note: This course is a non-GWO certified equivalent of the GWO Basic Technical Training, Mechanical module. No certificate in WINDA will be issued.

Training SE-P-50420

GWO BTT Electrical

Purpose
The overall purpose of the course is to give the participants the knowledge and skills to carry out basic Electrical tasks (supervised by an experienced technician), using safe working procedures and the correct PPE.

Who should attend
The course is intended for candidates who have no previous experience of Electrical systems but may also be used to up skill candidates who have some knowledge of these areas in other spheres not specifically wind turbines.

Objectives
- Explain the basics of electricity;
- Explain risks and hazards associated with electrical work;
- Explain the function and symbol of electrical components;
- Explain the function of different types of sensors;
- Explain and interpret a simple electrical diagram and demonstrate how to assemble it on a circuit;
- Demonstrate how to make correct and safe measurements.

Technician

Validity period
No expiry

1.5 days

DK,DE,UK,US,IN, BR

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-49420

SGRE BTT Electrical

Purpose

The overall purpose of the course is to give the participants the knowledge and skills to carry out basic Electrical tasks (supervised by an experienced technician), using safe working procedures and the correct PPE.

Who should attend

The course is intended for candidates who have no previous experience of Electrical systems but may also be used to up skill candidates who have some knowledge of these areas in other spheres not specifically wind turbines.

Objectives

- Explain the basics of electricity;
- Explain risks and hazards associated with electrical work;
- Explain the function and symbol of electrical components;
- Explain the function of different types of sensors;
- Explain and interpret a simple electrical diagram and demonstrate how to assemble it on a circuit;
- Demonstrate how to make correct and safe measurements.

Note: This course is a non-GWO certified equivalent of the GWO Basic Technical Training, Mechanical module. No certificate in WINDA will be issued

Technician

Validity period
No expiry

1.5 days

BR

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-50430

GWO BTT Hydraulic

Purpose

The purpose of the course is to give the participants the knowledge and skills to carry out basic hydraulic tasks (supervised by an experienced technician), using safe working procedures and the correct PPE.

Who should attend

The course is intended for candidates who have no previous experience of hydraulic systems but may also be used to up skill candidates who have some knowledge of these areas in other spheres not specifically wind turbines.

Objectives

- Explain the basics of hydraulics;
- Explain risks and hazards associated with hydraulic work;
- Explain the function of different types of pumps and demonstrate how to check start/stop pressure of a pump;
- Explain the function of different types of actuators;
- Explain the function of different types of valves;
- Explain the function of accumulators and demonstrate how to check and pre-charge;
- Explain the function of different types of sensors;
- Identify the components which transfer oil
- Describe oil handling procedures;
- Identify and find different components on a hydraulic diagram;
- Demonstrate how to measure the hydraulic pressure accurately.

Technician

Validity period
No expiry

1.5 days

DK,DE,UK,US,IN, BR

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-49430

SGRE BTT Hydraulic

Purpose

The purpose of the course is to give the participants the knowledge and skills to carry out basic hydraulic tasks (supervised by an experienced technician), using safe working procedures and the correct PPE.

Who should attend

The course is intended for candidates who have no previous experience of hydraulic systems but may also be used to up skill candidates who have some knowledge of these areas in other spheres not specifically wind turbines.

Objectives

- Explain the basics of hydraulics;
- Explain risks and hazards associated with hydraulic work;
- Explain the function of different types of pumps and demonstrate how to check start/stop pressure of a pump;
- Explain the function of different types of actuators;
- Explain the function of different types of valves;
- Explain the function of accumulators and demonstrate how to check and pre-charge;
- Explain the function of different types of sensors;
- Identify the components which transfer oil
- Describe oil handling procedures;
- Identify and find different components on a hydraulic diagram;
- Demonstrate how to measure the hydraulic pressure accurately.

Note: This course is a non-GWO certified equivalent of the GWO Basic Technical Training, Mechanical module. No certificate in WINDA will be issued

Technician

Validity period
No expiry

1.5 days

BR

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-50505

SGTT - Program Introduction E-learning

Purpose
The purpose of this e-learning is to provide the participant with knowledge of the Siemens Gamesa Technical Training setup. This includes how it builds on the GWO BTT standard, the method of execution through interactive e-learning and practical training at either a Siemens Gamesa training center or structured On-the-Job training.

Who should attend
The course is intended for Siemens Gamesa employees, customers and 3rd parties who are scheduled to complete the Siemens Gamesa Technical Training.

Objectives
- Know the course structure including the split between interactive e-learning and practical training;
- Understand the possibility of structured On-the-Job training as an alternative to practical training at a Siemens Gamesa Training Center;
- Understand that the e-learning associated with the practical courses are free of charge and can be revisited at any time.

Competencies
Upon completion of the course the participant have obtained the competency in understanding of the Siemens Gamesa Technical Training structure and curriculum.

Technician

Validity period
No expiry

10 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-50530

SGTT - Bolt Tightening Training E-learning

Purpose

The purpose of this e-learning is to provide the participant with introductory knowledge of the procedures for bolt tightening using manual and hydraulic tools. Additionally, the course will also introduce the participant to the applicable procedures for shimming tower flanges. The e-learning serves as a theoretical basis before practical training in a Training Center or at site.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks using hydraulic tools to perform torque as well as tensioning of bolts.

Objectives

- Recall the purpose of bolt tightening;
- List the bolt tightening procedure;
- Describe the difference between torque and tension;
- Recall the correct use of torque tools;
- Recall how to use tension tools correctly;
- Identify what distances are necessary when mounting the tool;
- Recognize when tools need calibrating;
- Identify where to find documentation associated with bolt tightening and how to fill it out;
- Identify when it is necessary to shim tower flanges;
- State the consequences of not shimming;
- List the steps in the shimming procedure;
- State how to measure the gap using a feeler gauge;
- Identify the information necessary to fill in the checklist correctly.

Competencies

- Basic knowledge of Siemens Gamesa's procedures for bolt tightening and tensioning, including the associated manual and hydraulic tools;
- Basic knowledge if Siemens Gamesa's method and procedure for shimming tower flanges.

Technician

Validity period
No expiry

95 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-50535

SGTT - Bolt Tightening Training

Purpose

The overall purpose of the course is to provide practical training in bolt tightening and shimming techniques and tools specific to Siemens Gamesa. Through the use of different types of exercises performed individually and/or in small groups the ability to safely and competently perform torqueing and tensioning of bolts as well as shimming are achieved.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties seeking to supplement their base knowledge of bolt tightening, with the procedures and tools specific to Siemens Gamesa.

Objectives

Knowledge and Skills:

- Know how to find documentation applicable to torqueing, tensioning and shimming;
- Skills in using torque wrenches correctly to tighten bolts;
- Skills in inspecting, assembling/dismantling and adjusting the hydraulic torque and tensioning tools;
- Skills in using hydraulic torque and tensioning tools correctly to tighten bolts using the two-stage bolt tightening procedure;
- Skills in inspecting, measuring and filling in checklist as part of shimming;
- Know how to use shimming tools for filling air gaps by following the applicable procedure.

Competencies

- Select technical manuals and documentation for bolt tightening and shimming tasks to be performed under supervision;
- Safely operate specialized tools used for bolt tightening and shimming;
- Suitably fill out appropriate checklists when working in the turbine.

Technician

Validity period
No expiry

5 hours

DK, DE, UK, US,ES, IN,BR

Language	**EN**
Theory (%) / practice (%)	**20/ 80**
On site	**yes**

Training SE-P-50540

SGTT - Gearbox Inspection and Oil Sampling E-learning

Technician

Validity period
No expiry

80 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Purpose

The purpose of this e-learning is to provide the participant with introductory knowledge of the procedures for inspection of gearboxes. This includes identifying different types of damage to teeth and bearings as well as establishing the root cause. Additionally, the course will also introduce the participant to oil sampling and the ISO4406 standard. The e-learning serves as a theoretical basis, before practical training in a Training Center or at site.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks on gearboxes including oil sampling.

Objectives

- Identify the key parts of a gearbox;
- Recognize wheels and pinions on a number of turbine models;
- Identify different types of bearing;
- Recognize the importance of following the Inspection Checklist;
- Recognize types of damage to teeth and bearings and state what causes them;
- State the purpose and location of the internal lubrication system, inline and offline filtering systems;
- Interpret the ISO 4406 rating on an oil sampling report;
- Assess the level of pollution on a filter magnet;
- State the key steps involved in changing the offline filter;
- List the steps involved in taking an oil sample correctly.

Competencies

- Basic knowledge of Siemens Gamesa's procedures for inspection of gearboxes;
- Basic knowledge if Siemens Gamesa's method and procedure for taking oil samples.

Training SE-P-50545

SGTT - Gearbox Inspection and Oil Sampling

Purpose

The purpose of this course is to provide the participant with hands on experience of the procedures for inspecting gearboxes, including identifying different types of damage to teeth and bearings as well as establishing the root cause. Additionally, this course covers oil sampling and the ISO4406 standard.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks on gearboxes including oil sampling.

Objectives

- Understand how to choose the correct documentation for performing gearbox inspection and how to take an oil sample;
- Apply the technical documents and perform work procedures for gearbox inspection and taking an oil sample;
- Perform a gearbox inspecting in accordance with Work Instruction;
- Perform exchange of an inline filter and classify pollution levels;
- Perform extraction of a gear oil sample in accordance with Work Instruction.

Competencies

- Select technical manuals and documentation for gearbox inspection and how to take an oil sample;
- Perform a gearbox inspection in accordance with a Work Instruction;
- Exchange an inline filter and classify pollution levels;
- Extraction of a gear oil sample in accordance with a Work Instruction;
- Fill out appropriate checklists when working in the turbine.

Technician

Validity period
No expiry

300 minutes
US-240 minutes

DK, DE, UK, US,IN

Language	**EN**
Theory (%) / practice (%)	**20/ 80**
On site	**yes**

Training SE-P-50570

SGTT - Cable Training E-learning

Purpose

The purpose of this e-learning is to provide the participant with thorough theoretical knowledge of work on cables of all sizes found in Siemens Gamesa wind turbines. This includes cable material types, shielding, connections, diagram reading and use of tools. The e-learning serves as a theoretical basis, before practical training in a Training Center or at site.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks related to cable work in Siemens Gamesa wind turbines.

Objectives

- Name the different types of cable used at Siemens Gamesa;
- State the advantages and disadvantages of each cable type;
- Explain how to mount and route cables safely and recognize the importance of doing;
- Identify the key tools used in small cable work;
- State the sources and effects of electrical noise;
- State the purpose of shielding when making connections;
- Identify the different types of shielding and state how they are fitted;
- Recognize how different shielding connections are illustrated on electrical diagrams;
- Recognize the right tools and equipment for carrying out the following work on copper (Cu) and aluminum (Al) cables: Cutting, Stripping, Crimping;
- Identify the correct procedure to connect the following cables: Cu – Cu, Cu – Al, Al – Cu, Al – Al;
- Recall the correct tools to use for the connections;
- Identify the procedures to follow in the Work Instruction on Main Cable Connections.

Competencies

Upon completion of the course the participant have obtained a theoretical understanding of cable work on all sizes of cables found in Siemens Gamesa wind turbines.

Technician

Validity period
No expiry

135 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-50575

SGTT - Cable Training

Purpose

The overall purpose of the course is to provide practical training in cabling techniques and types specific to Siemens Gamesa. Through the use of different types of exercises performed individually and/or in small groups the ability to safely and competently perform different types of cable work using the associated tools are achieved.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties seeking to supplement their base knowledge of cabling, with the cables, connections, procedures and tools specific to Siemens Gamesa.

Objectives

Skills:

- Skilled in choosing and preparing the right tools and equipment for work on small cabling in Siemens Gamesa turbines;
- Skilled in choosing and preparing the right tools and equipment for work on main copper and aluminum cables in Siemens Gamesa turbines;
- Skilled in cutting, stripping, assembling, crimping and mounting of copper and aluminum main cables as well as small cabling in Siemens Gamesa turbines.

Competencies

- Choose and prepare the right tools and equipment for work on small cabling and main copper and aluminum cables in Siemens Gamesa turbines;
- Perform cutting, stripping, assembling, crimping and mounting of copper and aluminum main cables.

Technician

Validity period
No expiry

330 minutes

DK, DE, UK, US,ES, IN

Language	**EN**
Theory (%) / practice (%)	**15/ 85**
On site	**yes**

Training SE-P-50520

SGTT - Documentation Training E-learning

Purpose
The purpose of this e-learning is to provide the participant with knowledge of how to find the relevant Siemens Gamesa documentation and identify the newest and current versions. Work Instructions and Checklists will be introduced in order to enable participants to assist in completing the needed documentation as part of completing the associated tasks at site. Additionally, the course will explain how to interpret different types of diagrams including electrical, hydraulic, cooling and lubricant diagrams.

Who should attend
The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks in Siemens Gamesa Wind Turbines.

Objectives
How to find and interpret the following Siemens Gamesa specific documentation:
- Service Manuals (ZSM);
- Operational Manuals (ZOM);
- Safety Manuals (SI);
- Assembly Instructions (ZAI).

Competencies
Upon completion of the course the participant have obtained the know how to find different types of Siemens Gamesa documentation, identify the newest version and interpret the contents, including electrical, hydraulic, cooling and lubricant diagrams.

Technician

Validity period
No expiry

45 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-50525

SGTT - Documentation Training

Purpose

The overall purpose of the course is to enable technicians to retrieve and effectively use the Siemens Gamesa provided technical procedures and manuals **for Siemens technology wind turbines.**

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks in Siemens technology wind turbines.

Objectives

- Understand how to find and choose service and installations manuals, work instructions, check lists and safety related documentation for a specific turbine type;
- Understand how to identify the information stated in the header and footer of the documents;
- Understand how to perform verification of completion of the assigned tasks by the use of control measures and check lists.

Competencies

- Find and choose service and installations manuals, Work Instructions, Check Lists and safety related documentation for a specific turbine type;
- Suitably fill out appropriate checklists to account for work in the turbine.

Technician

Validity period
No expiry

140 minutes

DK, DE, UK, US

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-50550

SGTT - Hand Tool Training E-learning

Purpose
The purpose of this e-learning is to provide the participant with ability to identify and name different kinds of hand tools, including electrical and hydraulic hand tools. The participant will know the importance of correctly inspecting and adjusting tools before and after use, as well as selecting the correct PPE while adhering to relevant safety rules. The e-learning serves as a theoretical basis before practical training in a Training Center or at site.

Who should attend
The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks in Siemens Gamesa Wind Turbines.

Objectives
Name and list different kinds of:
- Hand tools;
- Electrical tools;
- Hydraulic tools.

In addition:
- List the basic safety rules;
- Understand the importance of inspecting and adjusting the tools.

Competencies
Upon completion of the course the participant have obtained the know how to find different types of tools available in Siemens Gamesa and identify their use.

Technician

Validity period
No expiry

35 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-50555

SGTT - Hand Tool Training

Purpose

The overall purpose of the course is to provide practical training for the hand tools used in Siemens Gamesa. Through the use of different types of exercises performed individual and/or in small groups the ability to safely and competently inspect, prepare, use and maintain different types of tools are achieved.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks in Siemens Gamesa requiring the use of basic tools.

Objectives

- Understand how to identify the correct manual and electrical hand tools needed to perform a specific task;
- Skilled in inspecting hand tools for damages and wear;
- Know how to identify the correct tethering accessories for different types of hand tools and skilled in fitting them correctly;
- Know how to Identify the correct PPE to use when using different types of hand tools.

Competencies

- Identify and inspect the correct tools needed to perform tasks found in a Wind Turbine environment;
- Securing the tools from being dropping through the use of tethering accessories;
- Identifying and equipping the appropriate PPE when using manual and electrical hand tools.

Technician

Validity period
No expiry

2 hours

DK, DE, UK, US,ES, IN, BR

Language	**EN**
Theory (%) / practice (%)	**35/ 65**
On site	**yes**

Training SE-P-50560

SGTT - LOTO Awareness E-learning

Purpose

The purpose of this e-learning is to provide the participant with basic knowledge of LOTO procedures, giving them an understanding of the safety in place for tasks requiring LOTO. This includes a general walkthrough of the locks and tags used at site. The participant will know the difference between electrical, hydraulic and mechanical LOTO as well as understanding the fundamentals of the PPE required. The e-learning serves as a theoretical basis, before practical training in a Training Center or at site.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks requiring LOTO in Siemens Gamesa wind turbines.

Objectives

- State who is allowed to carry out LOTO;
- Name the three different types of LOTO;
- Identify the PPE required for Electrical LOTO;
- Recognize the correct LOTO documentation;
- Identify the correct locks and tags to use.

Competencies

Upon completion of the course the participant have obtained a basic understanding of LOTO, including who is allowed to do what and how.

Technician

Validity period
No expiry

30 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-50565

SGTT - LOTO Awareness (Siemens Technology)

Purpose

The overall purpose of the course is to provide practical training in the Siemens Gamesa Energy Isolations Procedures (EIP) used to perform Lock-Out Tag-Out (LOTO) on mechanical, electrical and hydraulic parts. Through the use of different types of exercises performed individually and/or in small groups the ability to safely and competently work in an environment under LOTO is achieved.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties scheduled to work in environment where Lock Out Tag Out is applied.

Objectives

- Understand how to identify the documentation and equipment needed to correctly perform LOTO on mechanical, electrical and hydraulic/pneumatic parts;
- Perform Energy Isolation Procedures (EIP) correctly on mechanical, electrical and hydraulic/pneumatic parts;
- Understand the importance of why LOTO is performed.

Competencies

Apply SGRE Energy Isolation Procedures (EIP) to perform LOTO of mechanical, electrical and hydraulic/pneumatic parts in a Wind Turbine environment.

Technician

Validity period
No expiry

60 minutes

DK, DE, UK, US

Language	**EN**
Theory (%) / practice (%)	**35/ 65**
On site	**yes**

SGTT - LOTO Awareness (Gamesa Technology)

Purpose

The overall purpose of this course is to provide the delegates with basic knowledge of LOTO/LOTOT based on Gamesa Energy Isolation Procedures as well as providing basic skills in applying them. The training serves to enable safe and competent work in an environment under LOTO/LOTOT and as a base for further competency development and actual authorization to perform LOTO. An introduction to switchgears on Gamesa turbines is given and the process and authorization required to de-energize and re-energize them is explained.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties scheduled to work in L-G environment where Lock Out Tag Out is applied.

Objectives

- Remember the three types of LOTO: electrical, mechanical and hydraulic;
- Know of the Gamesa policies and procedures for applying LOTO o IHS-1-008 EN Electrical Risk o PHS-1-006 EN Operational Control in H&S o PHS 1-006 R04 EN Permit for work with special risk;
- Know the three basic roles and their responsibilities and authorizations;
- Value the importance of correctly applied LOTO and the authorization process required to perform it;
- Know how to apply LOTO task descriptions and the 5 golden rules on electrical, mechanical and hydraulic parts, including identifying the necessary authorization, PPE, equipment and documentation;
- Recall the function and purpose of switchgears including how it is de-energized, re-energized and earthed as well as who is authorized to perform it.

Competencies

Know how to apply Gamesa LOTO task descriptions and the 5 golden rules on electrical, mechanical and hydraulic parts, including identifying the necessary authorization, PPE, equipment and documentation.

Technician

Validity period
No expiry

120 minutes

DK, UK,US,ES,IN,BR

Language	**EN**
Theory (%) / practice (%)	**/**
On site	**yes**

Training SE-P-50512

SGTT - Safe Access G4X, G5X, G8/9X, G114 and G10X

Purpose

The purpose of this eLearning is to provide an introduction to the general safety conditions for accessing and staying in Gamesa technology turbines, including G4X, G5X, G8/9X, G114 and G10X. Completion of the eLearning must be complemented by studying the applicable documentation for the platform.
Assessment: Multiple choice quiz, 80% correct answers required to pass.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks on Gamesa technology turbines, including the G4X, G5X, G8/9X, G114 and G10X.

Objectives

- Understand the general safety conditions for accessing and working in Gamesa turbines;
- Understand the overall conditions that affect the work and how they can be mitigated through different means including LOTO;
- Understand the use of anchor points as well as points for installing anchor devices;
- Introduced to de-pressurization of the hydraulic unit;
- Introduced to Eliminating accumulated torque in the yaw gears;
- Introduced to locking the rotor, pitch control system and mechanical blade lock;
- Basic knowledge of Gamesa wind turbines and safety conditions in general serving as foundation for further training and skill progression.

Technician

Validity period
No expiry

42 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**yes**

SGTT - General Technical Safety Awareness eLearning

Purpose

The purpose of this eLearning is to provide the participant with knowledge of the main components of the current wind turbine platforms.
Siemens Gamesa's basic Health and Safety rules will be introduced in order to explain the participant the risks and dangers a person who works in or near by a wind turbine is exposed to. This is to ensure that employees work as safely as possible and can contribute to Siemens Gamesa's Zero Harm Culture.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks in Siemens Gamesa Wind Turbines.

Objectives

- Name the main components in the wind turbine.
- List Siemens Gamesa's basic health and safety rules for technicians.
- Identify where to find the Siemens Gamesa's basic health and safety rules for technicians if safety issues arise.
- Recall the policy on Siemens Gamesa Zero Harm Culture.
- Recall which competencies are needed to perform your job function safely to minimize the potential risks to you and your co-workers.
- Identify technician profiles, within the Wind Technicians Competence Frameworks.
- List the actions of a Competent Person.
- Identify the differences between the competence framework for Project and Service technicians.
- Identify the purpose of a risk assessment.
- List the differences between "planned work" and "non-routine work" risk assessments.
- Recall how an incident or near miss can be reported using the KRIsen Management (KRIMA) System.
- Identify what hazardous material is.
- Recall how to find a Safety Data Sheets (SDS).
- Identify the parts of a Safety Data Sheet (SDS).

Competencies

- Basic knowledge of current wind turbines, safety in general and technician profiles serving as foundation for further training and skill progression.

Technician

Validity period
No expiry

95 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-50526

SGTT - SEFE and GOT training

Purpose

The purpose of this course is to provide training in the basic commonly used functionalities of the GOT (Gestor de Ordenes de Trabajo) work order management software including how to correctly and accurately create, fill and report work orders. Additionally the SEFE Viewer software for finding and reading documentation on Gamesa technology products and platforms is introduced, as well as the required SealPath software for decrypting documentation files.

Who should attend

The course is intended for SGRE and subcontracted technicians scheduled to perform work on Gamesa technology turbines that requires the use of work orders and access to Gamesa documentation.

Objectives

Knowledge:

- The purpose of GOT is to track tasks scheduled for or completed at site, including the overall WTG condition and resources spent during completion of the task;
- Access, generate and fill in data in most commonly used fields in all taps of a Work Order and send it;
- Know that a GOT mobile application is available for Android and iOS devices Access and find documents in SEFE, including manuals, checklist, diagrams and RA safety documents;
- Know that SealPath is an encryption tool that allows documentation opened in SEFE to be decrypted and viewed.

Competencies

Upon completion of the course the participants have obtained the competencies to access GOT and create and fill work orders. The participant will also be able to access SEFE Viewer to search through and find the correct documentation needed to perform their daily tasks.

Technician

Validity period
No expiry

240 minutes

DK, UK, US,ES,IN,BR

Language	**EN**
Theory (%) / practice (%)	/
On site	**yes**

Training SE-P-85400

SGTT General Electrical Awareness GL

The SGTT General Electrical Awareness e-learning course describes the regulations regarding electricity which are derived from the EN 50110-1 standard. This standard is applicable for all the CENELEC countries. Additionally to the European law, this e-learning also sets out the specific Siemens Gamesa regulations for working on electrical systems.

Purpose

To introduce Siemens Gamesa rules, derived from the EN 50110-1 standard and CENELEC regulations, regarding behaviour around electrical installations and give the participants basic knowledge about electricity and how to act in a safe manner near both Low and High Voltage systems.

Who should attend

This course is for employees who will enter wind turbines or production facilities with electrical installations. The content is derived from the EN 50110-1 standard, CENELEC regulations and describes the specific SGRE regulations for working on electrical systems. Locally there might be additional specific rules and regulations that must be attended in addition to this course.

Objectives

Knowledge:

- Electrical awareness in general;
- Recite the roles and responsibilities in a Work place;
- Restate basics of electricity;
- Dangers of electricity and 1. aid;
- Identify required PPE & tools;
- Summarize the Cenelec regulations for performing dead, live and vicinity zone work in general;
- Summarize the specific Siemens Gamesa regulations for performing dead, live and vicinity zone work in a Siemens Gamesa Wind Turbine.

Competencies

- Enter and be safe in wind turbines and production facilities with electrical installations;
- For Danish employees, this course corresponds to AUS and L-AUS.

This course does not qualify anyone to perform any electrical work unless you are appointed to do so.

Technician

Validity period 1 year

180 minutes

E-learning

Language	**EN, DE, DK**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-05235

Wind Electrical Safety Awareness

Purpose

The goal of this course is to provide participants with an introduction to the necessary knowledge and skills, through theory and practical training, to safely work around electrical systems and components. Participants will review and practice the use of personal protective equipment, tools and procedures needed to perform safe work with electrical components in a wind turbine environment - in accordance with Siemens Gamesa Regional and Internal regulations - EHS standards, PRO 18914-Control of Hazardous Energy, LSP 22195-LOTO, and INS 33147-Electrical Safe Work Practices that support CSA Z462-15-17, NFPA 70E, NESC 2017 and OSHA 29CFR1910 regulations.

Who should attend

The course is intended for Siemens-Gamesa Renewable Energy employees, contractors and other authorized personnel in Region North America.

Objectives

- Enforce, participate and lead in the All Zero Harm Culture when performing electrical work;
- Demonstrate use of all Resilience and Human Performance tools;
- Understand local legislation; such as, CSA Z462-15-17, NFPA 70E, NESC 2017 and OSHA 29CFR1910 regulations;
- Understand SGRE's policies and procedures regarding safely working with electrical circuits.
- Comprehend the roles and responsibilities within their respective work place.
- Demonstrate knowledge of arc flash hazards, general hazards and risks associated with working on electrical circuits/ WTG cabinets and their effect on the employee.
- Identify and select PPE to be used based on hazard when performing electrical work on a WTG.
- Apply and demonstrate knowledge through practical and use of: L-G IHS-1-009 Hazardous Energy Control LOTOT, INS 33147-Electrical Safe Work Practices, LSP 22195-LOTO and SI 54578I General Health and Safety Rules for Working in Turbines.
- Assure that Zero Energy verification tools/procedures are available when proving zero energy work.

Competencies

- General knowledge related to wind electrical safety and its components;
- If not deemed Authorized/Qualified or TSWA by SGRE, employees may not perform any LOTO tasks or live electrical work.

Technician

Validity period
1 year

8 hours

US

Language	**EN**
Theory (%) / practice (%)	**75/ 25**
On site	**yes**

Training SE-P-21350

Slinger Banksman

Purpose

The overall purpose of the course is to provide persons involved in rigging and slinging with the necessary theoretical and practical knowledge about slinging, rigging, and signaling to be able to perform the associated tasks in a safe and correct manner.

Who should attend

The course is intended for wind turbine technicians involved in rigging and slinging operations.

Objectives

Knowledge and skills:

- The requirements for the marking of lifting components;
- Pre / Post user control and correct storage of equipment;
- Discard criteria;
- Enterprise of Competence & end user equipment inspection;
- Recommended practice - such as LOLER & PUWER recommendations;
- Siemens Gamesa Lifting Operations Instructions INS 27212 & INS 26846;
- Identify the SWL and WLL on lifting equipment;
- Apply rule of thumb in regards to lifting angles and U-lifting;
- Use of slings, and equipment for lifting;
- Correct use of radio and hand signal communication to ensure safe lifting operations;
- Planning of lifting routes and lay down areas;
- Safe job analysis & risk assessment;
- Lift planning & risk assessment;
- Lifting team basics;
- Blind lifts;
- Slinging various types of load according to size, weight, shape and center of gravity;
- Choosing correct lifting equipment;
- Visual check of slings (wire / fiber);
- Visual control of lifting accessories;
- Awareness of safe behavior when participating in lifting operations;
- Knowledge of correct behavior when using hand signals or radio communication.

Technician

Validity period
No expiry

2 days

DK, UK

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-04200

Basic Lifting and Slinging Training (Slinger Banksman)

Technician

Validity period 3 years

8 hours

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Purpose

To provide the participants with the necessary skills to carry out basic slinging and lifting.

Who should attend

The training is aimed at all Siemens Gamesa employees who require knowledge and training in the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) in order for them to work safely at their work locations.

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Objectives

Knowledge and skills:

- Regulations accident statistics;
- Risk assessment and control measures;
- Lifting equipment;
- Lifting accessories use and limitations;
- Selection and use of lifting equipment and accessories;
- Practical training in basic lifting and slinging.

Training SE-P-86470

SICS Hand Terminal User

The training is structured as 15 missions that shall be carried out by the delegate. The delegate is given an assignment outline and should find the correct action by consulting the training material and the tutorial n the e-learning. Then complete the assignment using the virtual hand terminal embedded in the e-learning.

Purpose

This training is designed to give the delegate knowledge of the SICS controller hand terminal and basic skills in the use of the SICS Controller Hand Terminal in SWT Generators. The e-learning should be the knowledge foundation for the Level 5 training on SICS controlled wind turbines. This e-learning will also be integrated in the transfer matrix when transferring from a WTC 3 controlled to a SICS controlled Wind Turbine.

Who should attend

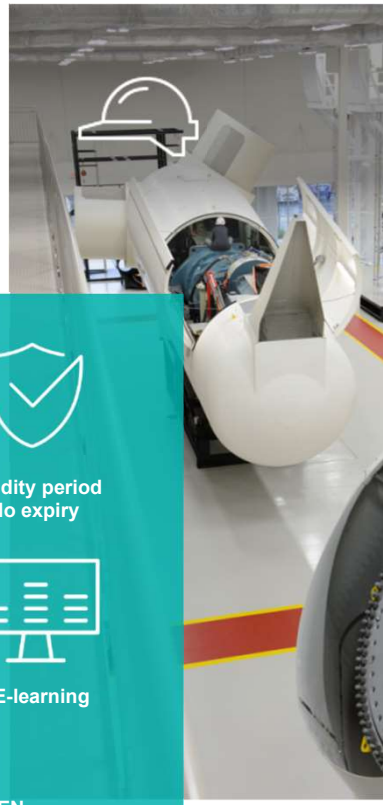
All field technicians (Service & Project) that have not taken any SICS controller training and personnel in support or manufacturing roles.

Objectives

The learning objective of this training is to enable technicians to understand and work with the SICS controller hand terminal and recognize the intuitive layout and access to the user interface.

Competencies

- Connect the Hand terminal or the Siemens Gamesa approved laptop to the SICS Controller in the turbine;
- Understand the setup and navigation on the SICS Controller Hand Terminal;
- Operate the SICS Controller Hand Terminal in accordance with the instructions issued in the Service Manual.



Technician

Validity period
No expiry

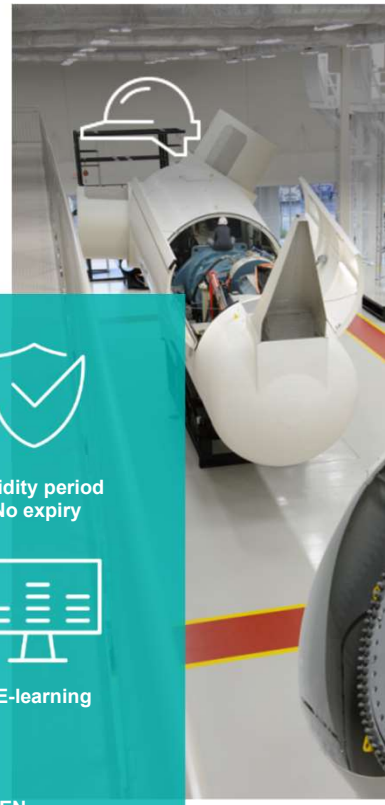
30 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

WTC-3 Controller Hand Terminal user

The training is structured as 16 missions that shall be carried out by the technician. The Delegate is given an assignment outline and should find the correct action by consulting the manuals. Then, complete the assignment using the virtual hand terminal embedded in the e-learning.



Purpose

This training is designed to give the learner knowledge of WTC3 controller and basic skills in the use of WTC-3 Hand Terminal in SWT Generators. The e-learning should replace the Power Point presentation in Level 2 training and be the knowledge foundation for the Level 5 training on WTC 3 controlled wind turbines. The certificate has no expiry date. The e-learning may also replace any other Power Point based training on WTC 3 controller Hand Terminal.

Who should attend

All field technicians (Service & Project) that have not taken any controller (WTC 3) training.

Objectives

This learning objective of the training is to enable technicians to understand and work with the WTC 3 controller hand terminal and the connection between the hand terminal and the associated Operating Manual and Service Manual.
After completing this e-learning the Delegate will be familiar with the Hand Terminal in WTC 3 controlled Wind Turbines.

Competencies

After completing this e-learning the Delegate will be familiar with the Hand Terminal in WTC 3 controlled Wind Turbines.

Technician

Validity period
No expiry

2 hours

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-85620

Avanti Lift L/XL - User

Purpose

The objective of this training is to enable a technician to conduct a correct inspection of the lift before use and to operate the service lift during normal conditions as well as if a power shortage should happen. This e-learning covers cover the L and XL Avanti lift.

Who should attend

All persons who have to Operate a Avanti lift in the turbine.

Objectives

Knowledge and skills:

Inspection and Operation:

- Check when last inspected;
- Check assembly of cabin;
- Steel wire ropes;
- Basement installation;
- Power supply;
- Function of safety gripping device;
- Emergency stops;
- Top and bottom stop;
- Automatic operation;
- Put on your PPE for fall arrest;
- Main switch;
- Travel path for obstacle's;
- Enter the lift;
- Close gate;
- Close cabin door;
- Operate the lift;
- Leave the lift at intermediate platforms;
- Leave the lift at lift stop platform;
- Use automatic operation from bottom/ top.

In the event of break down:

- Manual descent;
- Open/close cabin doors;
- Evacuation to/from cabin to ladder;
- Detect obstacle/failure;
- Continue using the service lift.

Technician

Validity period 2 years

2 hours

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Avanti Lift L/XL - Installation, Inspection & Maintenance

Purpose

To provide the delegates with the correct safety attitude towards daily and scheduled safety inspections. To provide the delegates with knowledge and skills in functionality in ASL and Traction hoist M500 series, installation, inspection, minor mechanical and electrical troubleshooting as well as replacements of ASL and hoist in Avanti SWP L, XL, L02 and XL02 lift Models.
The contents of SE-P-21775 is included in this course.

Who should attend

All persons who wish to do service and maintenance of the Avanti lift in the turbine.

Objectives

Knowledge and skills:

- Understand reasoning of daily and annual inspections;
- Able to describe all functions of the main parts in ASL and Traction hoist;
- Aware that hoist housing disassembly and ASL housing disassembly will void Avanti warranty/responsibility;
- Solid understanding of the importance of proper safety inspections and documentation - daily as well as the first 9 annual inspections;
- Basic knowledge of all major electrical and mechanical components of SWP model lifts. This includes the knowledge and skills enabling the delegate to execute annual inspection, exchange of ASL and Traction device as well as minor mechanical troubleshooting and exchange of components;
- Able to use the manuals as reference to finding information.

Competencies

- Delegates understand that they will be certified only to perform regular annual inspections and are not certified to perform extended 10 year and 20 year inspections;
- Delegates will understand that they are the ambassadors for promoting correct daily inspections and it will be the responsibility to check the Daily Inspection Log ensuing there is a reasonable relation between hour counter and Daily Inspection in the log.

Technician

Validity period
2 years

2 days

DK

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-21775

Avanti Lift L/XL - Installation and Start-up

Purpose
To teach the delegates the necessary skills and attitude to execute safe and qualified work on installation and maintenance of Avanti Service Lift SWP Model L and XL, as well as preparing it for third party inspection.

Who should attend
All persons who wish to do service and maintenance of the lift L/XL in the turbine.

Objectives
- Execute physical test of fall arrester (ASL);
- Perform proper installation of safety wire and hoist wire;
- Torque and verify tension of guide wires.
- Skilled in the installation, maintenance and preparation for inspection of Avanti Lift L/XL;
- Finally, delegate will practice to prepare the installation for third party inspection by use of the existing Test-form.

Competencies
The course does not give the delegate the competency to perform yearly inspection.

Technician

Validity period
2 years

8 hours

DK

Language	**EN**
Theory (%) / practice (%)	**40/ 60**
On site	**yes**

Training SE-P-85650

Sky Man TH250 - User eLearning

Purpose

The objective of this training is to enable a technician to conduct a correct inspection of the lift before use and to operate the service lift during normal conditions as well as if a power shortage should happen.

Who should attend

All persons who have to Operate a Sky-man lift in the turbine.

Objectives

Knowledge and skills:

- Daily inspection of the Sky-man lift;
- Empty Transfer of the lift to the top of the Nacelle;
- Operation of the lift during loss of power.

Technician

Validity period 2 years

60 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Sky Man TH250 - Installation and Maintenance

Through the hands-on experience the participants will learn how to maintain, install and troubleshoot the Tower Hoists.

Purpose

To enable the participants to do maintenance, inspection and installation on the Sky-man lift.

Who should attend

Training is aimed at Siemens Gamesa employees, customers and 3rd parties whose work responsibilities involve performing service and installation of the Sky-man lift.

Objectives

Knowledge and Skills:

- Valid regulations;
- Components, functions and technical specifications;
- Groundwork duties like suspension beam, ladder, arrangement, etc.;
- On site installation tasks like power supply, connecting send all stations, feed in steel wires, etc.;
- Inspection of Fall arrest devices and cables;
- Relevant documentation and reports;
- Risk assessment;
- Activating and deactivating the safety switch;
- Maintain, inspect and troubleshoot the lift.

Competencies

Upon completion of the training the participants will be Sky-man certified. That will authorize them to do maintenance, installation and inspection of the Sky-man lift, as well as qualify them to perform different tasks with the lift in zone 1 access areas.

Technician

Validity period
2 years

4 hours

DK, UK

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-85605

Goracon GWB-250/450-SWP - User eLearning

Purpose

The overall purpose of this course is to provide the knowledge required to safely operate and inspect the Goracon GWB-250/450-SWP lifts before use.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties who is required to operate and perform daily inspection of the Goracon GWB-250/450-SWP lifts.

Objectives

Knowledge and skills:

- Explain the basic configuration of the lift system.
- Know the training requirements for operating the lift and the responsibility of the operator.
- Perform daily inspection prior to use, including the functional test and perform shutdown of the lift.
- Know how to act in case the lift fails the inspection.
- Safely operate the lift in accordance with the user manual.
- Recall the safety evacuation procedures and criteria.

Technician

Validity period 2 years

90 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-21810

Goracon GWB-250/450-SWP - Installation and Maintenance

Purpose

The overall purpose of the course is to gain the knowledge and skills required to install and maintain the Goracon GWB-250/450-SWP lifts.

Who should attend

Training is aimed at Siemens Gamesa employees, customers and 3rd parties whose work responsibilities involve performing service and installation .

Objectives

- Knowledge and Skills:
- Operate the service lift
- Perform Installation of the service lift including tower extension
- Perform scheduled service in accordance with the maintenance manual
- Know how to fill out the required documentation as part the installation or scheduled service

Technician

Validity period
2 years

2 days

DK

Language	**EN**
Theory (%) / practice (%)	**40/ 60**
On site	**yes**

Training SE-P-85800

Power Climber Sherpa RD Advance - User eLearning

The aim of this training is to guide the participants through the fundamental components, specifications and functions of Power Climber lift and enable them to use the lift with compliance to valid regulations.

Purpose

Through the simulation experience the participants will learn how to use the Power Climber lift and do daily inspections.

Who should attend

Training is intended for Siemens Gamesa employees whose duties require using the Power Climber lift.

Objectives

Knowledge and Skills within:

Functions:

- Emergency Stop;
- Transfer key;
- Intern Up and down button;
- Extern Up and down button (set button);
- Warning lights;
- Door;
- Manual decent leveler;
- Over-speed manual trip button;
- Reset knob;

Specifications of the lift:

- Identify Power Supply;
- Identify Lifting Speed;
- Memorize Over-speed activation;
- Replicate Correct raising and lowering of platform with power;
- Replicate correct Emergency Decent procedure.

Warning labels:

- Red light labels;
- Yellow label manual decent;
- Anchor point label;
- PPE label;
- Activation safety device label;
- Replicate Daily inspection.

Technician

Validity period 2 years

60 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-21650

Power Climber Sherpa RD Advance - Installation and Maintenance

Through theory and practice, participants will learn how to operate, install, carry out service, maintenance and troubleshoot problems on the Power Climber lift system.

Purpose

This training will enable the participant to install, perform service and maintenance and troubleshoot the Power Climber lift. Additionally, the participants will be able to operate the Power Climber lift in compliance with valid regulations.

Who should attend

The training is intended for Siemens Gamesa employees, customers and 3rd parties whose duties include operation, installing and maintaining the Power Climber lift system.

Objectives

Knowledge and Skills:

- Operate the Lift/Cage safely in compliance with current legislation;
- Evacuate from the cabin;
- Install the Power Climber lift system;
- Maintain, service and troubleshoot; problems on the Power Climber lift system;
- Fill in maintenance reports.

Competencies

Upon completion, participants will be certificated by Power Climber to operate, install and maintain the Power Climber lift system within zone 1 of Siemens Gamesa wind turbines.

Technician

Validity period 2 years

4 hours

DK

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-21400

Telehandler

Purpose

To provide the knowledge and skills on how to use the telehandler properly and safely in the construction sites with regard to the Danish law requirements.

Who should attend

The training is aimed at Siemens Wind Power employees required to perform duties with telehandler on site.

Objectives

Knowledge and Skills within:

- Danish working environment authority regulations;
- Operational aspects of telehandler with forklift;
- Lift, dispose and stack different types of goods;
- Telehandler control system, its centre of gravity and stability assessment with the help of load diagram;
- Working in space restricted areas and uneven foundations;
- Daily inspection and maintenance of telehandler and lifting material;
- Risk assessment.

Technician

Validity period
No expiry

5 days

DK

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-21460

Telehandler incl. Crane Basics

Purpose

The purpose of this course is to provide basic training in the safe and competent operation of telehandler crane operation over 8 Tm as well as providing the legally required crane basics certificate training.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties working telehandlers or similar multifunction machines used for crane lift over 8 Tm under Danish law.

Objectives

- Know the risks associated with work using cranes, including crane configurations and safety devices;
- Know the estimated use of cranes, including use restrictions;
- Operate cranes safely and competently, including performing sliding transport of loads using all functions as well as stopping swinging loads;
- Know the rules for loading / unloading, including the correct selection of hoist accessories and attachment jaws;
- Perform assessment of the weight and center of gravity of a load and whether the load has been hooked correctly before lifting;
- Perform guidance of a slinger through the use of standardized hand signals and radio;
- Know how often cranes and accessories must be inspected and maintained;
- Perform crane operator inspection of the crane and accessories;
- Know the content of crane logbooks and how to fill them in;
- Know the rules of performing combined lifts using cranes as well as person lifts;
- Know how to acquire information on the specific crane being operated based on the supplier provided documentation.

Competencies

Upon completion of the course the delegates have obtained the competencies to perform normally occurring crane tasks using cranes with a capacity over 8 Tm, including crane basics and thus fulfilling the Danish Working Environment Authority qualification requirements, in accordance with Executive Order on Occupational Health Education number 1346 of 29/11/2017, appendix 1, point 2.1.

Technician

Validity period
No expiry

7 days

DK

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Mobile Cranes > 8-30 TM incl. Crane Basics

Purpose

The purpose of this course is to provide basic training in the safe and competent operation of mobile crane of 8-30 Tm as well as providing the legally required crane basics certificate training.

Who should attend

The course is intended for Siemens Gamesa employees, customers and 3rd parties working mobile cranes of 8-30 Tm under Danish law.

Objectives

Knowledge and skills:

- Risks associated with work using mobile cranes, including mobile crane configurations and safety devices;
- The estimated use of mobile cranes, including use restrictions;
- The rules for loading / unloading, including the correct selection hoist accessories and attachment jaws;
- The content of crane logbooks and how to fill them in, rules of performing combined lifts using mobile cranes as well as person lifts;
- Understand the stability of mobile cranes and different soil conditions and how to assess the carrying capacity of different substrates;
- How to select optional equipment, i.e. forks and loaders and how to mount it correctly and the correct use of support legs;
- How to acquire information on the specific crane being operated based on the supplier provided documentation;
- Operate mobile cranes safely and competently, including performing sliding transport of loads using all functions as well as stopping swinging loads;
- Perform assessment of the weight and center of gravity of a load and whether the load has been hooked correctly before lifting;
- Perform guidance of a slinger through the use of standardized hand signals and radio;
- Perform crane operator inspection of the crane and accessories;
- Perform set up of mobile cranes correctly Read load diagrams.

Competencies

Perform normally occurring crane tasks using mobile cranes with a capacity over 8 Tm and up to 30 Tm, including crane basics and thus fulfilling the Danish Working Environment Authority qualification requirements, in accordance with Executive Order on Occupational Health Education number 1346 of 29/11/2017, appendix 1, points 2.1 and 2.2.

Technician

Validity period
No expiry

10 days

DK

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-06697

Generic Crane User Course

Purpose

The overall purpose of the course is to provide technicians with the generic knowledge and skills required to operate the variety of cranes and hoists in SGRE wind turbines.

Who should attend

The course is intended for Siemens Gamesa technicians who are going to operate different cranes and hoists in Siemens Gamesa wind turbines.

Objectives

- Recall the existence of the country specific rules and legislations and the Siemens Gamesa rules and regulations;
- Perform pre-operational checks of the compact crane and the additional lifting attachments;
- Explain how to use the different lifting attachments;
- Explain how to use the control handles;
- Describe the use and after use parking of the compact crane;
- Operate the HIAB SWP2 / SWP2-V4 cranes according to the manufacturer's rules and regulations and with respect to the applicable manuals and work instructions;
- Explain how similar compact cranes shall be operated based on the knowledge and skills acquired from the above generic course.

Competencies

Upon completion of the course the participants have obtained the generic qualifications required to operate the following cranes or similar SWP approved cranes in Siemens Gamesa wind turbines:

- HIAB SWP2 / SWP2-V4;
- HMF 50T2-M, 150T, 265T2-M and 333T;
- Palfinger PCWM 3300;
- Compact cranes with similar functionality and categories.

Technician

Validity period
3 years

8 hours

DK, UK, DE

Language	**EN, DE**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-85690

Demag DS10 Wind user

Purpose

Training provides the skills to perform visual verification that equipment is ready for use and lift the items with the crane from ground and up to the nacelle This e-learning on DS 10 wind hoist shall give knowledge about performing a pre-use inspection of the DS 10 wind hoist and qualifications to handle the DS 10 wind hoist in a Wind Turbine Environment.

Who should attend

Personnel who have to work with the Demag DS 10 wind hoist in Wind Turbine Environment.

Objectives

- Perform a pre use check before using the DS 10 wind hoist;
- Understand the importance of safe parking of the DS 10 wind hoist;
- Unlock and lock the DS 10 wind hoist from its parking position;
- Handle and maneuver the DS 10 wind; hoist when performing lifting operations.

Competencies

This training will enable the operator to use the DS10 wind hoist in a safe way according to the risk assessment for the hoist.

Technician

Validity period
No expiry

100 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-06692

Demag DS10 Hoist and KBK Crane Rail System Maintenance

Technician

Validity period
No expiry

8 hours

DK, UK

Language	EN
Theory (%) / practice (%)	40/ 60
On site	no

Purpose

The overall purpose of the course is to provide the technician with the basic knowledge and skills to perform scheduled maintenance, statutory inspection and minor troubleshooting on the Demag DS10 hoist and KBK Rail system.

Who should attend

The course is intended for SGRE and subcontracted technicians performing scheduled maintenance, statutory inspection and minor troubleshooting of the KBK rail system and Demag DS10 hoist in SGRE WTG.

Objectives

- Understand the build-up of the KBK rail system and the basic configuration of the Demag DS10 hoist;
- Understand how to perform inspection and tests in accordance with the maintenance manuals, work instructions and checklists;
- Understand how to and perform minor trouble shooting, repair work and component replacement in accordance with applicable documentation, including:
- Identify and find needed documentation;
- Minor trouble shooting of the Demag DS10 hoist and KBK rail system in general;
- Shortening or replacement of the wire rope;
- Replacement of rail sections and end stops;
- Introduction to most common recorded issues with the system.

Competencies

- Perform scheduled maintenance, statutory inspection and minor troubleshooting of the KBK rail system and Demag DS10 hoist.
- The authorization to perform statutory inspection is regulated by local law and additional training requirements must be adhered to.

Crane and Chain Hoist User Training

This training gives an opportunity for participants to learn the techniques of crane and chain hoist operation for all interested parties.

Purpose

The training is designed to enable the participants to operate the HMF supplied cranes and chain hoist used in the wind turbines with compliance to Siemens Gamesa documentation.

Who should attend

Training is aimed at Siemens Gamesa employees, customers and 3rd parties whose responsibilities include operating the special crane and using the electrical chain hoist.

Objectives

Knowledge and Skills:

- Both crane and electrical chain hoist structure and its diverse components;
- The operational aspects of the crane and chain hoist;
- Directions and prohibitions for chain hoist use related to wind turbine generator Siemens Gamesa wind turbine works;
- Relevant documentation and special equipment;
- Hydraulic, Electric and load diagrams;
- Safety inspection in daily use;
- Identify the correct lifting equipment used within Siemens Gamesa;
- Risk assessment.

Competencies

After attending this training the participants will be qualified to operate the crane and chain hoist in a safe and proficient manner.

Technician

Validity period
No expiry

4 hours

US

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-06500

Crane and Chain Hoist Service

The prior knowledge and skills successfully gained from the crane user training will be a valuable asset for this training. Here the participants will develop their skills to derive appropriate solutions when performing service and maintenance duties.

Purpose
The training is designed to enable the participants to do service and maintenance of the HMF supplied cranes and chain hoist used in the wind turbines with compliance to Siemens Gamesa documentation.

Who should attend
The training is intended for Siemens Gamesa employees, customers and 3rd parties who wish to do service and maintenance of the special crane and electrical chain hoist.

Objectives
Knowledge and Skills:
- Refreshment of both crane and electrical chain hoist operational issues;
- Refreshment of directions and prohibitions for chain hoist;
- Refreshment of Siemens Gamesa documentation and diagrams;
- The safety system functions by the controller
- Inspection and adjustment of the hydraulic system;
- Maintenance of crane and load chain;
- Safety inspection in accordance with HMF cranes;
- Annual safety inspection check list;
- Troubleshooting of relevant systems;
- Risk assessment.

Competencies
Successful completion of this training qualifies the participants to perform service and maintenance of the HMF supplied crane and chain hoist.

Technician

Validity period
No expiry

8 hours

DK, DE

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-06620

Maintenance - HIAB SWP2/SWP2-V4

Purpose

The training is designed to enable the participants to perform service and scheduled maintenance and basic troubleshooting on the HIAB SWP 2 / SWP2 - V4 crane and wire winch used in the Large drive turbines with compliance to Siemens Gamesa documentation.

Who should attend

The training is intended for Siemens Gamesa employees, customers and 3rd parties whose duties include operation, installing and maintaining the HIAB SWP 2 / SWP2 - V4 crane.

Objectives

Knowledge

- Safe work when changing components;
- Locating relevant documentation on workspace.

Skills:

- Perform daily inspection;
- Perform annual service in accordance with Siemens Gamesa documentation;
- Perform basic troubleshooting.

Technician

Validity period 2 years

8 hours

DK, DE

Language	**EN**
Theory (%) / practice (%)	**40/ 60**
On site	**yes**

Training SE-P-07890

ABB ACS-800 Converter Training

Purpose

The overall purpose of the course is:

- Introduction and overview of ABB converter cabinets and components.
- Overview and operation of boards inside of the converter.
- Advanced understand of ABB Converter Schematics and how to utilize while testing/troubleshooting.
- Discuss Testing of Components module for technicians to understand how to properly test and verify components inside of the cabinet.
- Introduction of Local Operation to be able to perform testing/troubleshooting of the converter more effectively.
- Introduce faults for Troubleshooting of the converter using alarm manuals and methods for effective understanding of system.

Who should attend

The course is intended for technicians that troubleshoot the ABB Converter.

Objectives

Knowledge and skills:

- Understand how the converter works
- Use schematics to be able to diagnose issues with a better comprehension of what is happening
- Identify components and appropriately test for functionality
- Perform testing of the converter to more accurately troubleshoot
- Apply troubleshooting techniques to become more efficient in the troubleshooting of the converter system

Technician

Validity period
2 years

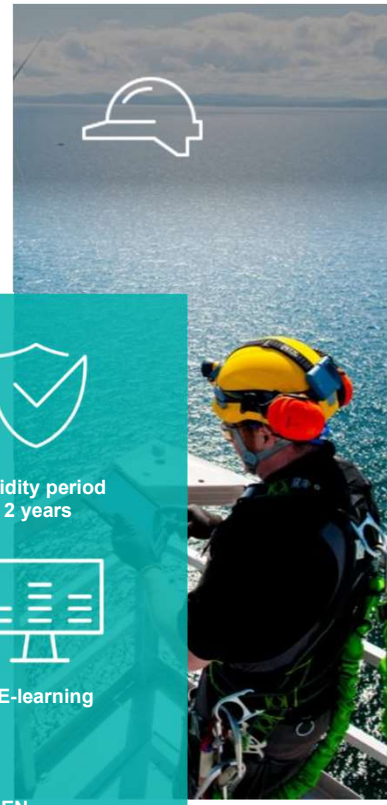
2 days

US

Language	**EN**
Theory (%) / practice (%)	**35/ 65**
On site	**yes**

Training SE-P-85300

ABB Converter



Purpose

Since the number of the ABB Converters that will be installed in Siemens Gamesa Turbines will rapidly increase in the future, it is essential to have basic knowledge about the ABB Converter. SGRE introduces this e-learning in an effort to promote safe operation, avoid incidents, and accomplish "zero harm" in wind turbine construction. The aim is to produce well-trained personnel for SGRE, who will efficiently meet the high demands of this job and eventually become the best in the industry.

Who should attend

This e-learning course is specifically designed for Turbine technicians with prior knowledge of converters.

Objectives

Siemens Gamesa uses the ABB Converter in several types of wind turbines. The ABB Converter is a back to back converter integrated into one large consolidated frame.

In this e-learning you will learn about the ABB Converter's components, functions and how to shut down the system in order to perform maintenance on the turbine in a safe way.

The ABB Converter described in this course is a liquid-cooled converter for wind turbines. This type is used for the 2.3 variable speed geared Siemens Gamesa turbines and will be installed in other types of turbines in the future. The converter is located at the ground level of the Turbine tower.

Knowledge and skills:

- ABB Converter's function and components;
- How to shut down the system in order to perform maintenance on the turbine in a safe way.

Competencies

How to shut down the system in order to perform maintenance on the turbine in a safe way.

Technician

Validity period
2 years

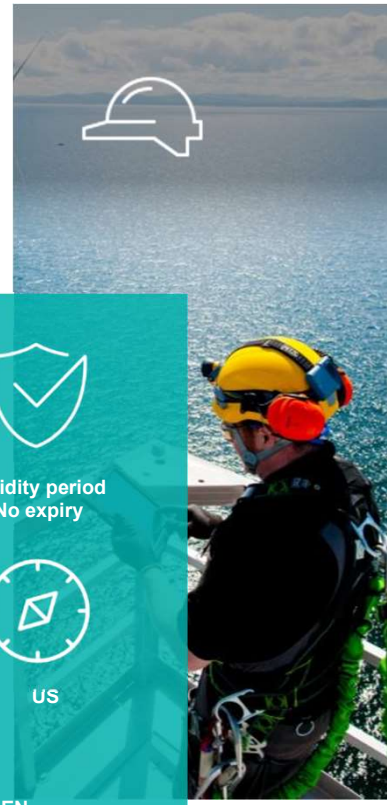
2 hours

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-09555

DAC Converter training for Gamesa 3.3 – 3.465MW



Purpose
•Functionality
•Main components
•Maintenance

Who should attend
The course is intended for Siemens Gamesa employees and 3rd parties seeking to supplement their base knowledge.

Objectives
- Know its function and characteristics for the different components;
- Know the main maintenance for converter cabinet;
- Specific knowledge in converter components, electrical risks, electrical measures, electrical schematics.

Competencies
Specific knowledge in converter components, electrical risks, electrical measures, electrical schematics.

Technician

Validity period
No expiry

8 hours

US

Language	**EN**
Theory (%) / practice (%)	/
On site	**yes**

Service TSWA

Task Specific Work Approval (TSWA) is an educational program for personnel approving them to perform specific tasks in the turbine. TSWA program does not replace the formal training but serves as an add-on to the formal training ensuring on job experience and verification.

Purpose

This training supports the end users to understand the TSWA program, requirements and the responsibilities of the roles involved.

Who should attend

The training is valuable for the following roles in the organization: TSWA coordinator, TSWA person, CAP, CAP Responsible, Competence Committee members, TSWA candidate, CAP candidate, CAP Responsible candidate, Site manager, Site lead, Site planner, Country manager, Site supervisor, Operations manager, Installation lead, Resource manager, Resource coordinator, and Individuals requesting a specific task to be approved for TSWA program.

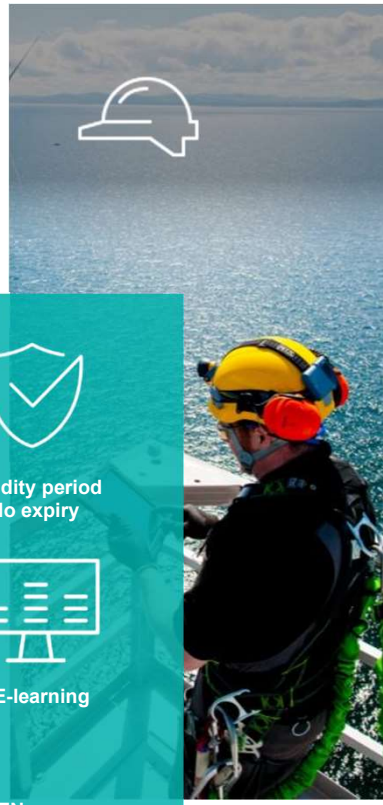
Objectives

Knowledge:

- TSWA process flow starting with the task request and up to the final approval of personnel on site;
- Tasks within and out of TSWA scope;
- Main roles & their responsibilities;
- TSWA program documentation (forms, certificates, work instructions);
- TSWA documentation master database;
- TSWA minimum training requirements;
- Registration of certificates and approved personnel.

Skills:

- Apply TSWA program forms;
- Find TSWA program documentation;
- Identify the sequence of TSWA process flows;
- Understand TSWA person role;
- Understand the responsibilities of Certified Appointed Person (CAP);
- Understand the responsibilities of Certified Appointed Person Responsible (CAP R).



Technician

Validity period
No expiry

50 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-86250

Service WTCF

Wind Technician Competence Framework (WTCF) is a competence program for personnel working in or with Siemens Gamesa Wind Turbine Generators.

Purpose

Training is built up to support the end users to understand Service WTCF concept and requirements.

Who should attend

Mandatory for Maintenance technicians and up, AP, APT, Site Leads.

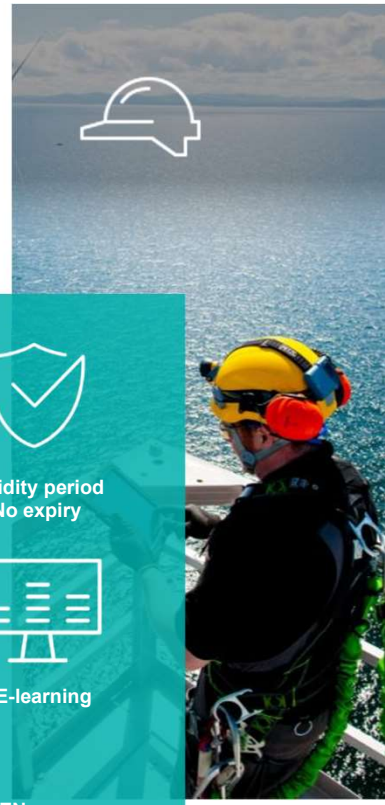
Objectives

Knowledge:

- WTCF definition;
- WTCF profiles, responsibilities & authorizations;
- Team set up;
- Training catalogues;
- Job profile training requirements;
- On job Competence approval: sequence and roles involved;
- Competence Committee org. structure and responsibilities;
- Competent Person (CP), Appointed Person (AP) and Appointed Person Trainer (APT) roles;
- Personnel accreditation requirements;
- WTCF documentation;
- Requirements for offering and selling the training.

Skills:

- Find WTCF documents;
- Understand the framework content;
- Able to recognize the profile responsibilities and limit of work authorizations;
- Apply the training color codes;
- Create the training package for job profiles;
- Create the working team and identify the lead person per working team;
- Aware of Competence Committee structure;
- Understand the responsibilities and duties of Competent Person, Appointed Person and Appointed Person Trainer;
- Recognize the competence approval process steps and requirements;
- Understand the requirements of personnel shifting from Level 7 status to the job profile;
- Fill out the certificate templates for CP, AP, APT certification.



Technician

Validity period
No expiry

50 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-86450

Check & Refill Nitrogen Bladder Accumulator

Technician

Validity period
No expiry

20 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Purpose

The purpose of this e-learning is to present a tool aiming at improving safety when checking and refilling hydraulic bladder accumulators.

Who should attend

Mandatory for all technicians working on the CS turbines.
Optional for any field technician personnel.

Objectives

- Assemble the nitrogen refill kit for bladder accumulators;
- Perform a pressure check on a nitrogen bladder accumulator;
- Perform a refill of the nitrogen bladder accumulator;
- Disassemble the nitrogen refill kit after performing the service;
- Safety associated with working with and around compressed gas (N2);
- Recognize the appropriate personal protective equipment PPE for performing service and maintenance on a bladder style accumulator.

Training SE-P-86500

Piston Accumulator Refill Kit e-learning

Purpose
The e-learning introduces and demonstrates the correct use of the stationary booster kit and mobile top-up kit for performing service on hydraulic piston style accumulators. The purpose of the e-learning is to familiarize the participant with performing hydraulic piston accumulator top-up using the mobile top-up kit and stationary booster kit.

Who should attend
Technicians performing service or commissioning on wind turbines with piston style accumulators.

Objectives
- Prepare the mobile top-up kit for service in the turbine;
- Apply techniques to safely perform piston accumulator top-up during service;
- Choose the correct tools and PPE for using the mobile kit and stationary unit;

Competencies
After completion of the e-learning the participant will be familiar with the tools, PPE, and use of the mobile top-up kit and stationary booster unit.

Technician

Validity period
No expiry

60 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-09700

PP Technique FFB 360 Operator Course

Purpose

The overall purpose of the course is to provide the skills, knowledge and certification to participants, who have no experience in working with a FFB 360 Blade Guided Platform, for them to be able to operate the platform safely and within the manufacturers' recommendations and guidelines.

Who should attend

Technicians who have to work on a Wind Turbine site, performing inspection and repair on blades and towers onshore and offshore.

Objectives

- Understand the general legislation and manufacturers' requirements that applies to the FFB 360 regarding testing, inspections, and operations;
- Assemble and disassemble the platform and equipment, and make the FFB 360 ready for transport;
- Hoist wires to / from the nacelle and install them in designated nacelle anchor points, use of subcontractor supplied matching equipment/machinery (ActSafe) included;
- Operate the FFB 360 in Trailer, Tower and Blade mode;
- Setting up power supply to FFB 360 and PLC "start-up" procedure/sensor check;
- Setting up the wire hoists, and assemble the Main and Back-up wires in the stated anchor points/rigging BlockStop/ rigging TIRAK hoist/ fitting counterweights to wirers;
- Set-up the Blade Capture System, and to release the blade and return the FFB 360 to the tower, use of subcontractor supplied matching equipment/machinery (ActSafe) included;
- Identifying operating faults and alarms, and initiating and executing appropriate troubleshooting actions;
- Carry out a self-rescue (abandon platform) and assisted rescue (casualty rescue) from the FFB 360 for both an onshore and offshore location;
- Pass a theoretical examination in operating and safety requirements of the FFB 360 and a practical assessment by demonstrating the skills and behaviors obtained during the training course, in assembling, inspecting, operating, blade capture and release, disassembling and preparing a platform ready for transport.

Technician

Validity period
2 years

4 days

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-06850

EUP- Elektrotechnisch unterwiesene Person

Purpose

The overall purpose of the course is to give the participants the knowledge and skills to carry out basic electrical work (supervised by an experienced technician), using safe working procedures and the correct PPE.

Who should attend

Technicians who work on and close to electrical installation/electrical components.

Objectives

Knowledge and skills:

- Fundamentals of electrical engineering;
- Network/grid forms and their special features;
- Important electrical equipment and power installations;
- Operation of heavy current systems according to DIN VDE 0105 part 100;
- Areas of activity of electrically trained persons;
- Danger of electrical current;
- Protective measures;
- Contents of the accident prevention regulations;
- First aid for electrical accidents;
- Rules and regulations according to DGUV - V1 und V3 and ArbSchG GV02.

Competencies

Upon completion, the technician "EUP" is allowed to work on electrical systems under supervision by an experienced technician "EFK" as well as jobs that are related to a written procedure or work instruction according to DGUV - V 1 und DGUV - V3.

Technician

Validity period 1 year

6 hours

DE

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**yes**

Training SE-P-09815

Product SGRE GX

Purpose

The purpose of this course is to provide technical knowledge in wind turbine generators of SGRE GX MW platforms that Siemens Gamesa designs. The different modules will present the main wind turbine components, their functionality and operations.

Who should attend

The training is intended for Siemens Gamesa Renewable Energy customers and 3rd parties both the novices and field experts who have an interest to get basic knowledge of the Siemens Gamesa GX MW platform.

Objectives

Knowledge and skills:

The participants will obtain the basic knowledge within:

- Gamesa turbine operational and mechanical systems
- Hydraulic and electrical systems
- Converter, gear and oil system, water cooling system
- Use of schematics and hydraulic diagrams.

Technician

No Expiry

3 days

US

Language	**EN**
Theory (%) / practice (%)	**80/20 3 days 60/40 4.5 days**
On site	**yes**

133

Maintenance Technician

Training SE-P-08190

SWP G1 TPT Cross-skill Training

In this training the technician will get information about the difference between the VS-CS related to maintenance work. Technical manuals and work instructions. Systems information, Safety information and function of the hydraulic system, brake system, and Elspec system.

Purpose

To enable the participants to perform the operation and maintenance tasks on the G1 CS Siemens Gamesa wind turbine systems in a safe and systematic manner using the available documentation and selected tools provided by Siemens Gamesa.

Who should attend

G4 Field Technicians who perform mechanical completion or scheduled service.

Objectives

Upon completion of the course the Technician must have achieved service Cross-skill training from SWP G2/G4 VS turbine to SWP G1 CS turbine.

Competencies

The technician will have work authorization according to PRO-20643.

Maintenance Technician

Validity period No expiry

8 hours

DK

Language	**EN**
Theory (%) / practice (%)	**80/ 20**
On site	**yes**

Training SE-P-09450

SWP Technical Product Training G2

Purpose

- Apply knowledge of turbine systems and technical documentation to perform mechanical commissioning or scheduled maintenance;
- Perform mechanical commissioning or scheduled maintenance in accordance with Siemens Gamesa technical and safety guidelines;
- Practice scheduled maintenance and mechanical commissioning to build practical competence in the field.

Who should attend

The course is intended for all technicians that are performing scheduled maintenance or mechanical commissioning.

Objectives

- Explain to colleagues the process of performing scheduled maintenance and mechanical troubleshooting;
- Carry out tasks from the relevant checklist in accordance with Siemens Gamesa safety standards, technical manuals and work instructions under supervision of a designated competent technician;
- Work with various tools and chemicals safely in order to satisfy the tasks on the specific checklist;
- Perform mechanical and electrical LOTO under supervision of a competent technician;
- Fill out the required documentation for completing all the tasks for scheduled service or mechanical commissioning.

Maintenance Technician

Validity period No expiry

4.5 days

DK, DE

Language	**EN**
Theory (%) / practice (%)	**70/ 30**
On site	**yes**

Training SE-P-09410

G4 TPT (Technical Product Training)

Purpose

The overall purpose of the course is to qualify field service and commissioning technicians in the scheduled maintenance and mechanical completion of the G4 Variable Speed (VS) turbine. In addition, the participants will have the opportunity to gain additional experience and WTG specific system knowledge, beside the experience and knowledge they have already gained from previous practical work.

Who should attend

G4 Field Technicians who perform mechanical completion or scheduled service.

Objectives

- Apply knowledge of turbine systems and technical documentation to perform mechanical completion or scheduled maintenance;
- Perform mechanical completion or scheduled maintenance in accordance with Siemens Gamesa technical and safety guidelines;
- Practice scheduled maintenance and mechanical completion to build practical competence in the field.

Competencies

- Explain to colleagues the process of performing scheduled maintenance and mechanical troubleshooting;
- Carry out tasks from the relevant checklist in accordance with Siemens Gamesa safety standards, technical manuals and work instructions under supervision of a designated competent technician;
- Work with various tools and chemicals safely in order to satisfy the tasks on the specific checklist.

Maintenance Technician

Validity period No expiry

4.5 days

DK

Language	**EN, DE**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-09350

Technical Product Training D3 (TPT)

Purpose
The overall purpose of the course is to qualify field service and commissioning technicians in the scheduled maintenance and mechanical completion of the D3 turbine product family.

Who should attend
Field technicians performing scheduled maintenance or mechanical completion of D3 turbines.

Objectives
- Apply knowledge of turbine systems and technical documentation to perform mechanical completion or scheduled maintenance;
- Perform mechanical completion or scheduled maintenance in accordance with Siemens Gamesa technical and safety guidelines;
- Practice scheduled maintenance and mechanical completion to build practical competence in the field.

Competencies
- Explain to colleagues the process of performing scheduled maintenance and mechanical troubleshooting;
- Carry out tasks from the relevant checklists in accordance with Siemens Gamesa safety standards, technical manuals, and work instructions under supervision of a designated competent technician;
- Work with various tools and chemicals safely in order to satisfy the tasks on the specific checklist;
- Perform mechanical and electrical LOTO under supervision of a competent technician;
- Fill out the required documentation for completing all the tasks for scheduled service or mechanical completion.

Maintenance Technician

Validity period No expiry

4.5 days

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09840

Technical Product Training Basic (TPT - B)

Purpose

The overall purpose of the course is to give the Participants the knowledge and skills to attend a Technical Product Training Core course (TPT - C), using safe working procedures and the correct PPE in accordance with Siemens Gamesa Renewable Energy safety guidelines.

Who should attend

The course is intended for candidates who have a little or no previous experience of working in wind turbines.

Objectives

- Understand the basic principles of entering a wind turbine
- Understand the basic principles of planning and executing scheduled work on wind turbines
- Understand and explain risks and hazards associated with work near and in wind turbines
- Explain the basic components and lay-out of a wind turbine

Competencies

Upon completion of the course the participants have acquired the right to attend the Technical Product Training Core Course (TPT - C)

Maintenance Technician

Validity period No expiry

3 days

DK, UK, US

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09842

Technical Product Training Core (TPT - C)

Purpose

The overall purpose of the course is to: Introduce the participant to the Wind Turbine functionality and technical documentation in order to empower the technician to handle actions associated with service tasks in an effective and cost efficient manner. The course will introduce a number of tools and techniques to enable maintenance of the turbine.

Who should attend

The course is intended for technician's that will conduct service on Siemens Gamesa Renewable Energy turbines.

Objectives

- Explain the basic design and functionality of the turbine systems
- Describe the available technical documentation
- Use the measuring and testing tools that will be used in connection with service and commissioning of the wind turbine
- Apply the documentation
- Identify components on the yaw system
- Describe the maintenance of the Yaw motor brake
- Identify Electrical installations
- Identify safety system in the turbine
- Identify the Hydraulic system, Symbols, drawing and PPE
- Identify the Lubrication system in the turbine
- Explain the turbine cooling systems function.

Maintenance Technician

Validity period No expiry

2 days

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09844

Technical Product Training Siemens Geared Platform (TPT SG Platform)

Purpose

The overall purpose of the course is to qualify field service and commissioning technicians in the scheduled maintenance and mechanical completion of the Siemens Geared (SG) platform.

Who should attend

The course is intended for all technicians that will be performing scheduled maintenance or mechanical completion on Siemens Gamesa Renewable Energy Siemens Geared turbines.

Objectives

- Apply knowledge of turbine systems and Siemens Gamesa Renewable Energy technical documentation to perform mechanical completion or scheduled maintenance.
- Explain technical and safety guidelines.
- Practice scheduled maintenance and mechanical completion to build practical competence in the field.

Maintenance Technician

Validity period No expiry

2 days

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09846

Technical Product Training Direct Drive Platform (TPT DD Platform)

Purpose

The overall purpose of the course is to qualify field service and commissioning technicians in the scheduled maintenance and mechanical completion of the DD platform.

Who should attend

The course is intended for all technicians that are performing scheduled maintenance or mechanical commissioning on Siemens Gamesa Renewable Energy Direct Drive turbines.

Objectives

- Apply knowledge of turbine systems and Siemens Gamesa Renewable Energy technical documentation to perform mechanical completion or scheduled maintenance.
- Explain technical and safety guidelines.
- Practice scheduled maintenance and mechanical completion to build practical competence in the field.

Maintenance Technician

Validity period No expiry

2 days

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09850

Siemens Geared G1 Lock Out Tag Out (LOTO)

Purpose

The overall purpose of the course is: For the instructor / AP to assess the participants overall ability to perform LOTO on the specific turbine within the Siemens Gamesa health and safety guidelines.

Who should attend

The course is intended for service technicians who will in the future be performing scheduled maintenance on this specific turbine type.

Objectives

- Perform the necessary LOTO on the specific turbine which is required for making scheduled Maintenance
- Start/Stop of the turbine
- Activate/Deactivate the brake
- Yawing of the turbine and Securing the yaw
- LOTO of the rotor
- LOTO of the HUB and Blades
- De-energize an electrical cabinet

Competencies

- Able to perform mechanical and electrical LOTO under supervision of a competent person
- Able to fill out the required documentation for completing all the tasks for LOTO under supervision of a competent person

Maintenance Technician

Validity period No expiry

8 hours

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09852

Siemens Geared G2 Lock Out Tag Out (LOTO)

Purpose

The overall purpose of the course is: For the instructor / AP to assess the participants overall ability to perform LOTO on the specific turbine within the Siemens Gamesa health and safety guidelines.

Who should attend

The course is intended for service technicians who will in the future be performing scheduled maintenance on this specific turbine type.

Objectives

- Perform the necessary LOTO on the specific turbine which is required for making scheduled Maintenance
- Start/Stop of the turbine
- Activate/Deactivate the brake
- Yawing of the turbine and Securing the yaw
- LOTO of the rotor
- LOTO of the HUB and Blades
- De-energize an electrical cabinet

Competencies

- Able to perform mechanical and electrical LOTO under supervision of a competent person
- Able to fill out the required documentation for completing all the tasks for LOTO under supervision of a competent person

Maintenance Technician

Validity period No expiry

8 hours

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09854

Siemens Geared G4 Lock Out Tag Out (LOTO)

Purpose

The overall purpose of the course is: For the instructor / AP to assess the participants overall ability to perform LOTO on the specific turbine within the Siemens Gamesa health and safety guidelines.

Who should attend

The course is intended for service technicians who will in the future be performing scheduled maintenance on this specific turbine type.

Objectives

- Perform the necessary LOTO on the specific turbine which is required for making scheduled Maintenance
- Start/Stop of the turbine
- Activate/Deactivate the brake
- Yawing of the turbine and Securing the yaw
- LOTO of the rotor
- LOTO of the HUB and Blades
- De-energize an electrical cabinet

Competencies

- Able to perform mechanical and electrical LOTO under supervision of a competent person
- Able to fill out the required documentation for completing all the tasks for LOTO under supervision of a competent person

Maintenance Technician

Validity period No expiry

4 hours

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09856

Siemens Direct Drive D3 Lock Out Tag Out (LOTO)

Purpose

The overall purpose of the course is: For the instructor / AP to assess the participants overall ability to perform LOTO on the specific turbine within the Siemens Gamesa health and safety guidelines.

Who should attend

The course is intended for service technicians who will in the future be performing scheduled maintenance on this specific turbine type.

Objectives

- Perform the necessary LOTO on the specific turbine which is required for making scheduled Maintenance
- Start/Stop of the turbine
- Activate/Deactivate the brake
- Yawing of the turbine and Securing the yaw
- LOTO of the rotor
- LOTO of the HUB and Blades
- De-energize an electrical cabinet

Competencies

- Able to perform mechanical and electrical LOTO under supervision of a competent person
- Able to fill out the required documentation for completing all the tasks for LOTO under supervision of a competent person

Maintenance Technician

Validity period No expiry

4 hours

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09858

Siemens Direct Drive D7 Lock Out Tag Out (LOTO)

Purpose

The overall purpose of the course is: For the instructor / AP to assess the participants overall ability to perform LOTO on the specific turbine within the Siemens Gamesa health and safety guidelines.

Who should attend

The course is intended for service technicians who will in the future be performing scheduled maintenance on this specific turbine type.

Objectives

- Perform the necessary LOTO on the specific turbine which is required for making scheduled Maintenance
- Start/Stop of the turbine
- Activate/Deactivate the brake
- Yawing of the turbine and Securing the yaw
- LOTO of the rotor
- LOTO of the HUB and Blades
- De-energize an electrical cabinet

Competencies

- Able to perform mechanical and electrical LOTO under supervision of a competent person
- Able to fill out the required documentation for completing all the tasks for LOTO under supervision of a competent person

Maintenance Technician

Validity period No expiry

8 hours

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Competent Assessor Course

Purpose

The overall purpose of the course is to educate an Appointed Person (AP) or Appointed Person Trainer (APT) candidate for assessing Certified Person (CP) technician's onsite. This would also apply to the equivalent competency framework of outside customers/ contractors that wish to attend this course, or any other similar assessment operation.

Who should attend

The course is intended for experienced field technicians that are CP qualified and are nominated for fulfilling the AP / APT role, as well as equivalent activities that involve an assessment role.

Objectives

- Assess candidate while solving a specific or predefined task;
- Apply communication principals for on the job assessments of candidates;
- Plan and perform an assessment;
- Give feedback to a candidate;
- Maintain focus on safe and secure work practice and Zero Harm policy.

Competencies

- Perform an assessment with candidates;
- Communicate both verbal and written about the results of the assessment;
- Plan the tasks that the candidate is to perform;
- Judge pass or fail of the candidate based upon their performance of the assignment.

Maintenance Technician

Validity period No expiry

2 days

DK, DE, US

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**yes**

Training SE-P-22110

Competent Assessor Upload and Assessment

Purpose

The overall purpose is that the candidate will be able to upload the required documentation after the assessment. This would also apply to the equivalent competency framework of outside customers / contractors that wish to attend this course, or any other similar assessment operation.

Who should attend

The course is intended for experienced field technicians that are CP qualified and are nominated for fulfilling the AP / APT role, as well as equivalent activities that involve an assessment role.

Objectives

- Explain what kind of documentation is needed for the assessment;
- Explain the correct upload method for assessment documentation;
- Perform correct upload of assessment documentation.

Competencies

- Finding and using the correct documentation that is needed for the assessment;
- Upload of assessment documentation.

Maintenance Technician

Validity period No expiry

8 hours

DK, DE, US

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-86480

Touchscreen Controller Hand Terminal user eLearning

Purpose

The overall purpose of the course is to familiarize the participants with the overall design and use of the controller hand terminal of Gamesa turbine controllers to be able to perform service operations in a safe and efficient way.

Who should attend

The course is intended for all technicians that are to perform work on turbines using the Gamesa Controller Hand Terminal.

Objectives

Knowledge and skills:

- Understanding of the design of the controller hand terminal
- Demonstrate the ability to navigate the menus of the controller hand terminal
- Demonstrate the ability to solve designated tasks on the turbine using the controller hand terminal
- Capable of describing the possibilities and risks associated with using the controller hand terminal

Maintenance Technician

Validity period No expiry

1 hour

E-learning

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**no**

Training SE-P-86530

D3, Service Valve 252; consequences of removal, eLearning

Purpose

The overall purpose of the course is to secure sufficient knowledge for technicians working on D3 turbines without Safety Valve 252 (Blue Handle) and to work safely in these turbines.

Who should attend

The course is intended for Maintenance and Troubleshooting technicians working in this specific turbine type, (characterized by the absence of the Service Valve 252) where the TPT training they completed did not include this feature.

Objectives

Knowledge and skills:

- Explain the changes in the turbine design associated with the removal of Service Valve 252
- Describe how to use the hand pump to build up pressure in the brake system
- Explain how to rotate the rotor with and without power on the nacelle in the specific D3 turbine without Service Valve 252
- Describe how to lock the rotor in the specific D3 turbine without Service Valve 252

Maintenance Technician

Validity period No expiry

30 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-09860

Technical Product Training Gamesa Geared Platform

Purpose

The overall purpose of the course is to qualify field service and commissioning technicians in the scheduled maintenance and mechanical completion of the Siemens Geared (SG) platform.

Who should attend

The course is intended for all technicians that will be performing scheduled maintenance or mechanical completion on Siemens Gamesa Renewable Energy Gamesa Geared turbines.

Objectives

- Apply knowledge of turbine systems and Siemens Gamesa Renewable Energy technical documentation to perform mechanical completion or scheduled maintenance.
- Explain technical and safety guidelines.
- Practice scheduled maintenance and mechanical completion to build practical competence in the field.

Maintenance Technician

Validity period No expiry

4 hours

DK, UK, US

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09862

Gamesa Geared G5X Lock Out Tag Out (LOTO)

Purpose
The overall purpose of the course is : For the instructor / AP to assess the participants overall ability to perform LOTO on the specific turbine within the Siemens Gamesa health and safety guidelines.

Who should attend
The course is intended for service technicians who will in the future be performing scheduled maintenance on this specific turbine type.

Objectives
- Perform the necessary LOTO on the specific turbine which is required for making scheduled Maintenance
- Start/Stop of the turbine
- Activate/Deactivate the brake
- Yawing of the turbine and Securing the yaw
- LOTO of the rotor
- LOTO of the HUB and Blades
- De-energize an electrical cabinet

Maintenance Technician

Validity period No expiry

4 hours

DK, UK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09864

Gamesa Geared G8X Lock Out Tag Out (LOTO)

Maintenance Technician

Validity period No expiry

4 hours

DK, UK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Purpose

The overall purpose of the course is : For the instructor / AP to assess the participants overall ability to perform LOTO on the specific turbine within the Siemens Gamesa health and safety guidelines.

Who should attend

The course is intended for service technicians who will in the future be performing scheduled maintenance on this specific turbine type.

Objectives

- Perform the necessary LOTO on the specific turbine which is required for making scheduled Maintenance
- Start/Stop of the turbine
- Activate/Deactivate the brake
- Yawing of the turbine and Securing the yaw
- LOTO of the rotor
- LOTO of the HUB and Blades
- De-energize an electrical cabinet

Training SE-P-09868

Gamesa Geared G10X Lock Out Tag Out (LOTO)

Maintenance Technician

Validity period No expiry

4 hours

DK, UK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Purpose

The overall purpose of the course is : For the instructor / AP to assess the participants overall ability to perform LOTO on the specific turbine within the Siemens Gamesa health and safety guidelines.

Who should attend

The course is intended for service technicians who will in the future be performing scheduled maintenance on this specific turbine type.

Objectives

- Perform the necessary LOTO on the specific turbine which is required for making scheduled Maintenance
- Start/Stop of the turbine
- Activate/Deactivate the brake
- Yawing of the turbine and Securing the yaw
- LOTO of the rotor
- LOTO of the HUB and Blades
- De-energize an electrical cabinet

Training SE-P-09866

Gamesa Geared G114X Lock Out Tag Out (LOTO)

Purpose

The overall purpose of the course is : For the instructor / AP to assess the participants overall ability to perform LOTO on the specific turbine within the Siemens Gamesa health and safety guidelines.

Who should attend

The course is intended for service technicians who will in the future be performing scheduled maintenance on this specific turbine type.

Objectives

- Perform the necessary LOTO on the specific turbine which is required for making scheduled Maintenance
- Start/Stop of the turbine
- Activate/Deactivate the brake
- Yawing of the turbine and Securing the yaw
- LOTO of the rotor
- LOTO of the HUB and Blades
- De-energize an electrical cabinet

Maintenance Technician

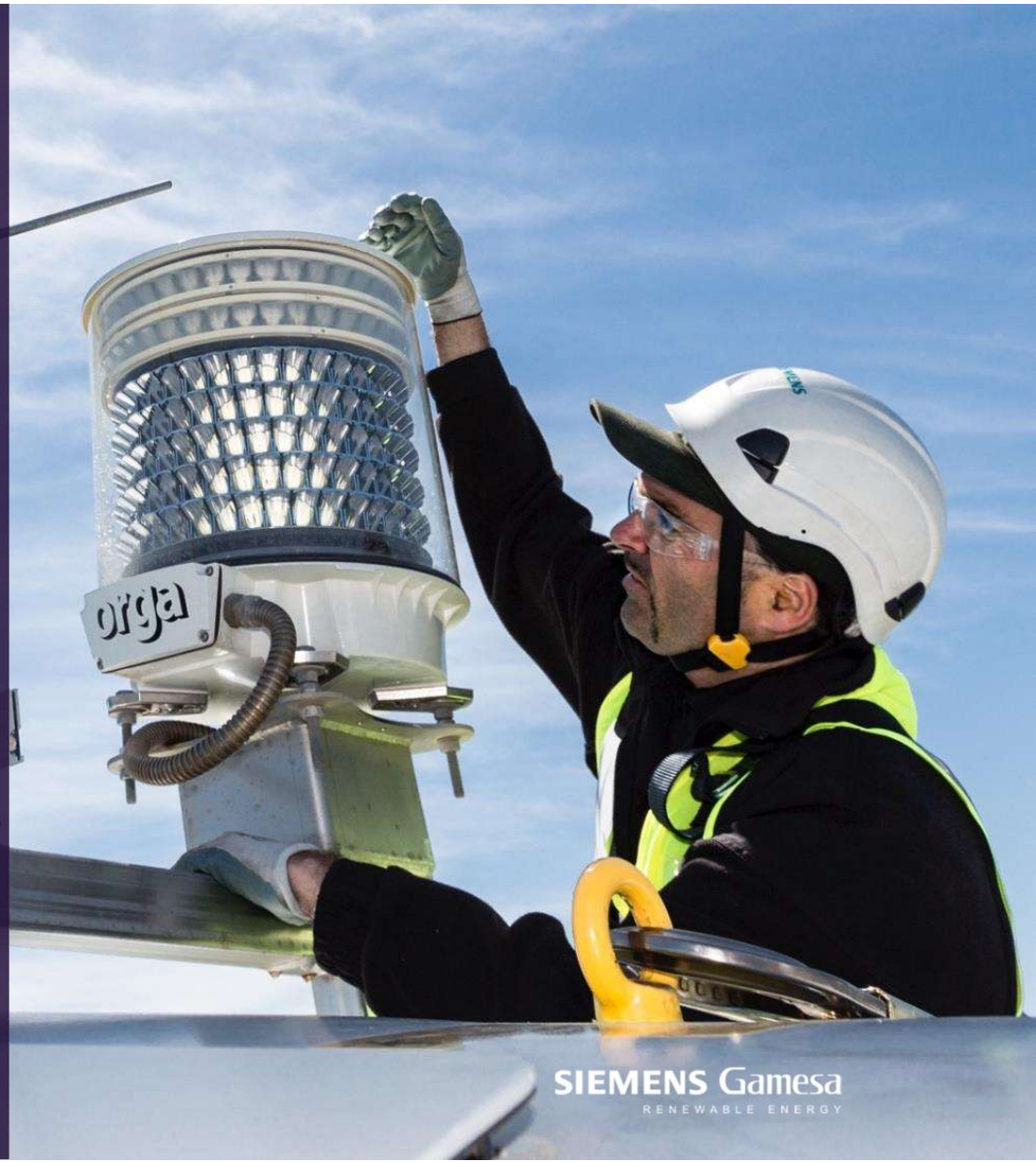
Validity period No expiry

4 hours

DK, UK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Troubleshooter



Training SE-P-08588

Commissioning & Fundamental Troubleshooting & Motors and Generators

Purpose

The purpose of this course is to train the participants on the fundamental philosophy of troubleshooting and the theory of operation of motors and generators used in Siemens Gamesa wind turbines. The participants will use through instructor guidance, classroom discussion, and practice the various techniques for gathering information, designing a testing strategy and executing testing on a simulator of the types of motors and generators found on the SGRE wind turbines. The participants will use the types of safety and diagnostic tools available to them on the site when conducting practical (lab) training. The goal is to ensure guidance for handling of corrective maintenance on site, gathering technical, failure data, planning and execution of scheduled and unscheduled maintenance and correct documentation of the execution of the maintenance action.

Who should attend

TS/CT-C.

Objectives

- Identify the types of motors and generators used in a Siemens Gamesa wind turbine;
- Use the correct tools used for testing motor and generator faults based on their testing strategy on a simulator;
- Create a statement to describe a motor/generator fault, reason of failure, and the steps taken to find the fault;
- Explain the concept of the 80% Rule of Troubleshooting;
- List the steps in the Seven Step Troubleshooting Process;
- Recognize Gestalt's Law of Closure and relate the concept to planning a troubleshooting strategy;
- Summarize the concepts for the basic rules to follow for troubleshooting;
- Design a testing strategy using the seven step process when given a set of facts on a theoretical system fault.

Competencies

- Recognition of the different types of induction motors and generators used in a Siemens Gamesa wind turbine;
- Recognize how a failure effects the operation of a motor or generator, outline the required tools and documentation for assessing the fault, plan a testing methodology, execute testing of the faulted motor or generator based on their plan, revise the plan if necessary, calculate the results from active testing, and write a statement explaining the nature and the remedy of the fault;
- Systematic fault finding within a controls based system.

Troubleshooter Technician

Validity period No expiry

1.5 days

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-08599

Commissioning & Troubleshooting of the WTC3 Turbine Controller

Purpose

The purpose of this module is to provide system knowledge and skills regarding the WTC3 main controller, the components included and the communication structures. The participants will achieve skills within software-upload; file handling and documentation tasks as well. Fundamental theory and practical knowledge regarding different ways to perform unscheduled maintenance, troubleshoot, remove and replace components in the wind turbine. Instruction on the theory of operation of the WTC 3 Controller components and interfaces. Training in practical troubleshooting and measuring of components and communication systems that are controlled by the WTC3 Turbine Controller system.

Who should attend

TS/CT-C.

Objectives

Knowledge and skills:

- The role and function of WTC3 and its connected modules;
- How turbine data is measured, collected, and presented;
- How software is uploaded to WTC3 and its connected modules;
- Use the Hand Terminal for daily operational tasks;
- Use the WTC3 documentation;
- Locate and measure sensor/output interfaces on the IO assemblies;
- Upload software to WTC3 and its connected modules.

Competencies

On the completion of this training, participants have achieved the competency to perform troubleshooting on the controller and controller interfaces in a WTC3 equipped turbine.

Troubleshooter Technician

Validity period No expiry

3 days

DK

Language	**EN**
Theory (%) / practice (%)	**40/ 60**
On site	**yes**

Training SE-P-08598

Commissioning & Troubleshooting of the SICS Turbine Controller

Purpose

The purpose of this module is to provide system knowledge and skills for the participants to understand and troubleshoot on the turbine network, Profinet, SICS hardware and TCM M-system in the turbine. The student will be able to update software in the turbine and use the different software tools. Perform hardware inspection using the electrical circuit diagram and be able to find relevant software and documentation. Training in practical troubleshooting and diagnosing of SICS components and communication systems Instructions and training in software upgrade of the SICS controller and its connected systems.

Who should attend

The course is intended for TS/CT-C.

Objectives

- Show the way to use the relevant documentation;
- Demonstrate the functionality of the Turbine network;
- Demonstrate the use of the Hand Terminal;
- Show the way to find the relevant CADdy++ Electrical diagram;
- Illustrate the functionality of the Cisco switch and VLAN;
- Demonstrate the function of ET200S modules;
- Explain the functionality of the Profinet and Profinet hardware;
- Demonstrate the function of Proneta and CP1616;
- Demonstrate how to do troubleshooting in the control system;
- Demonstrate how to use STIC and Launcher;
- Illustrate how to perform SICS firmware update;
- Describe the functionality of the TCM M-system basic functions.

Competencies

This course covers the controller part. The participant needs more training to pass level 6 troubleshooting.

Troubleshooter Technician

Validity period No expiry

4.5 days

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-08596

SWP G1 C&T (Commissioning & Troubleshooting)

Troubleshooter Technician

Validity period No expiry

3 days

DK

Language	**EN**
Theory (%) / practice (%)	**70/ 30**
On site	**yes**

Purpose

The purpose of this module is to provide system knowledge and skills for the participants to understand and troubleshoot on the turbine network, Profinet, SICS hardware and TCM M-system in the turbine. The student will be able to update software in the turbine and use the different software tools. Perform hardware inspection using the electrical circuit diagram and be able to find relevant software and documentation. Training in practical troubleshooting and diagnosing of SICS components and communication systems Instructions and training in software upgrade of the SICS controller and its connected systems.

Who should attend

The course is intended for TS/CT-C.

Objectives

- Show the way to use the relevant documentation;
- Demonstrate the functionality of the Turbine network;
- Demonstrate the use of the Hand Terminal;
- Show the way to find the relevant CADdy++ Electrical diagram;
- Illustrate the functionality of the Cisco switch and VLAN;
- Demonstrate the function of ET200S modules;
- Explain the functionality of the Profinet and Profinet hardware;
- Demonstrate the function of Proneta and CP1616;
- Demonstrate how to do troubleshooting in the control system;
- Demonstrate how to use STIC and Launcher;
- Illustrate how to perform SICS firmware update;
- Describe the functionality of the TCM M-system basic functions.

Competencies

This course covers the controller part. The participant needs more training to pass level 6 troubleshooting.

Training SE-P-08930

G2/G4 Commissioning & Troubleshooting VS

Purpose

The purpose of this module is to provide turbine specific knowledge and skills for performing troubleshooting.

Who should attend

Training is intended for Siemens Gamesa employees, customers and 3rd part contractors required to do electrical troubleshooting on the turbines.

Objectives

Knowledge and Skills:

- General anatomy of the turbine;
- Yaw system controls and troubleshooting;
- Pitch control electrical, hydraulic and mechanical;
- Troubleshooting on hydraulic, electrical, and mechanical systems;
- Use different forms of documentation;
- Turbine related (e.g., MORS, RDA, error response list);
- Locate and measure on all different components in the turbine;
- Use of PPE, LOTO;
- Fill out different types of paperwork related to the tasks.

Competencies

Upon completion of this training, participants have achieved the competency to perform troubleshooting on the G2 and G4 VS Turbine.

Troubleshooter Technician

Validity period No expiry

3 days

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

SE-07870-GL-T-CS-G2/G4 ABB Practical Training

Purpose

The overall purpose of the course is to provide the knowledge in how to use pc-tools on the ABB converter.

Who should attend

The course is intended for TS/CT-C.

Objectives

- Connect pc-tool to converter;
- Change parameter;
- Upload / download firmware;
- Fault analyses with pc-tool.

Troubleshooter Technician

Validity period No expiry

8 hours

DK, DE

Language	**EN**
Theory (%) / practice (%)	**20/ 80**
On site	**yes**

Training SE-P-86400

SCADA Introduction

Purpose

The purpose of this e-learning is to enhance the basic knowledge of SCADA, the possibilities and limitations within the system and to deliver the foundation for further training on SCADA i.e. SCADA Operation.

Who should attend

Mandatory:
- OLC grade 100;
- Any customer or Siemens Gamesa employee who wants WPS system overview and needs read-access.

Optional:
- WTCF Service Profiles - "Technician" and above.

Objectives

The objective of SCADA Introduction e-learning is to provide the participant with an overview of the setup and function of the SCADA system in Wind Turbines and Wind Parks.
After this e-learning the participant can apply for viewer access to SCADA system. This course does not qualify the participant to do any operational work on the SCADA system.

Knowledge and skills:
- Basic understanding of Supervisory Control and Data Acquisition (SCADA);
- SCADA hardware components;
- Configuration of park LAN;
- Introduction to Web WPS;
- Site Status Dashboard;
- Reports;
- Data configuration;
- Park Pilot;
- User access level.

Troubleshooter Technician

Validity period No expiry

60 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-07325

SCADA Operation

Purpose

The purpose of this training is to train participants for daily operation and maintenance of the wind park using the Siemens Gamesa Wind Park Supervisor (WPS) system.

Who should attend

The training is intended for persons that will utilize the WPS system for daily operation and maintenance of the wind park, adjustment of parameters and generating various historical reports.

Objectives

Knowledge and skills:

- Daily wind park operation and maintenance using the WPS system;
- Features and key parameters of the High Performance;
- Park Pilot (HPPP);
- Collection, interpretation, and presentation of data using WPS;
- Carrying out exercises using a training system (SCADA simulator).

Troubleshooter Technician

Validity period No expiry

8 hours

DK

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-07335

SCADA Operation for WTC or SICS Controller

Purpose

To provide instruction on the Siemens Gamesa Wind Park Supervisor (WPS) software system, and High Power Park Pilot (HPPP). This will enable the participants to properly identify and describe Wind Turbine Generator (WTG) components and WPS systems architecture, access the WPS system, navigate the various menus and sub-menus, retrieve daily and monthly reports, and initiate fault diagnosis.

Who should attend

The course is intended for 3rd party customers who operate a Wind Park that contains Siemens equipment.

Objectives

Knowledge and skills:

- Describe the purpose, composition, and operation of each major system in a Siemens Gamesa WTG with SICS or WTC3 Controller
- Explain the function and modes of operations of a Siemens Gamesa WTG with a SICS or WTC3 Controller
- Identify and discuss the purpose and operation of the components that comprise a Supervisory Control and Data Acquisition (SCADA) system
- Discuss the basic functions of the Web Wind Park Supervisor System (WPS) and High Power Park Pilot
- Demonstrate how to log into WPS and perform the following functions:

- Navigate the menus and Sub menus
- Refine the reporting criteria
- Develop the required output
- Analyze and interpret results
- Perform basic fault recognition and initiate diagnostics

Troubleshooter Technician

Validity period No expiry

3 hours

US

Language	**EN**
Theory (%) / practice (%)	**67/ 33**
On site	**yes**

Training SE-P-08594

Commissioning & Troubleshooting of the SDD D3

Purpose

The purpose of this course is to train the participants on the fundamental philosophy of troubleshooting on the SGRE D3 turbine. The participants will use and document the troubleshooting process; select the correct tools, implement the repair, and test with instructor supervision on a simulator. The goal is to ensure guidance for handling of corrective maintenance on site, gathering technical, failure data, planning, and execution of the unscheduled maintenance.

Who should attend

Field technicians performing unscheduled maintenance on the D3 turbine product family.

Objectives

Knowledge and Skills:

- Use the Siemens Gamesa instruction INS - 23952 Guidance for Corrective Maintenance Handling;
- Prepare a testing strategy using the seven step fault finding process from the Fundamentals of Troubleshooting class;
- Recognize the theory of operation of the various systems on the DD turbine;
- Design a testing strategy using the seven step process when given a set of facts on an actual system fault on the simulator;
- Use the correct tools for testing an induced fault based on the testing strategy created based on the given information;
- Identify the required technical documentation needed to analyze and test the system fault;
- Create a statement to describe the system fault, reason of failure, and the steps taken to find and correct the fault.

Competencies

The participants will be able to recognize how a failure effects the operation of a system, outline the required tools and documentation, plan a testing methodology, execute testing of the faulted circuit based on their plan, revise the plan if necessary, and write a statement explaining the nature and the remedy of the fault.

Troubleshooter Technician

Validity period No expiry

3 days

DK

Language	**EN**
Theory (%) / practice (%)	**70/ 30**
On site	**yes**

Training SE-P-86520

SWT D3 Mk.II Orientation

Troubleshooter Technician

Validity period No expiry

60 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Purpose

The purpose of this e-learning is to ensure all field technicians are informed about key changes in the design of the D3 Mk.II wind turbine.

Who should attend

- Experienced D3 Mk.I technicians who have attended Technical Product Training (TPT) prior to the Mk.II update;
- Service technicians that are CP, AP, or APT qualified;
- Installation technicians who have attended Operation During Installation prior to the Mk.II update;
- Field technicians wishing to prepare for any advanced technical training before coming to the training center.

Objectives

- To familiarize experienced D3 (Mk.I) field technicians on some of the key changes of the D3 Mk.II turbine;
- Knowledge about the design changes and locations of key subsystems on the D3 Mk.II turbine type;
- Familiarization on where to perform Lock-Out Tag-Out (LOTO) and potential hazard recognition;
- Familiarization with locations of various potential energy.

Training SE-P-08586

D6 / D7 Commissioning & Troubleshooting

Purpose

The purpose of this training is to give the participant the possibility to gain the right knowledge, skills and attitudes which make them able to perform Commissioning and Troubleshooting in a safe and sound matter according to the 6.0 MW and 7.0 MW commissioning and other relevant technical documentation. The technicians have received the knowledge so they can perform Commissioning and Troubleshooting.

Who should attend

Siemens Gamesa employees who are going to perform Commissioning and Troubleshooting of D6 / D7 turbines.

Objectives

- Explain the design of the D6 / D7 turbines and Safety in D6 / D7 turbines;
- Demonstrate the design and safety at work on Hub, Yaw and cooling system in D6 / D7;
- Show where to find the D6 / D7 Documentation on workspace and where to find the electrical diagrams on the Y-drive and D6 / D7 software packages;
- Demonstrate the D6 / D7 Hydraulic;
- Locate electrical cabinets and the know function of each cabinet in the D6 / D7 turbine;
- Show how the >CADdy ++ is designed and the basis knowledge on how to navigate the through electrical diagrams;
- Demonstrate the design and the function of the in the D6 / D7 Generator and M-system;
- Demonstrate how the D6 / D7 Converter is Explain how the tcp/ip, Profinet and Safety Profinet is constructed in the D6 / D7;
- Demonstrate the knowledge about Final commissioning documentation.

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Troubleshooter Technician

Validity period No expiry

4 days

UK

Language	**EN**
Theory (%) / practice (%)	**70/ 30**
On site	**yes**

Training SE-P-85990

MORS user

Purpose
The purpose of this training is to enable employees in Siemens Gamesa and service to use the MORS system.

Who should attend
All employees who use MORS.

Objectives
- Describe the overall workflow between monitoring, operations and support functions;
- Explain how case handling, escalation, support procedures and duty plan is part of the overall MORS process flow;
- Setup and maintain a useful and correct duty plan;
- Open cases;
- Update cases;
- Use action plans correctly and consistently;
- Close cases;
- Escalate cases.

Troubleshooter Technician

Validity period No expiry

60 minutes

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Operation During Installation

Training SE-P-09200

Operation During Installation D3 (ODI)

Purpose

Enable the Siemens Gamesa field technician to operate the D3 turbine during installation in a safe manner using the available documentation and selected tools by Siemens Gamesa.

Who should attend

Field technicians performing installation of the D3 product family.

Objectives

Knowledge:

- Operation of the hydraulic system;
- Use of the relevant documentation and Checklist;
- Use of the control boxes;
- Tool for Hub Service SICS;
- Use of the auxiliary generator;
- Pumping Unit For Pitching;
- Safety during installation of the turbine;
- How to set the turbine into idle mode.

Skills:

- Ability to perform mechanical LOTO on the turbine (e.g., yaw, pitch, and generator);
- Ability to position the generator during installation;
- Ability to use the Tool for Hub Service SICS and Pumping Unit For Pitching;
- Knowledge on how to operate the hydraulic manually;
- Knowledge on how to place the turbine into idle mode;
- Ability to safely operate the turbine during installation.

Competencies

Upon completion of the course, the technician will be qualified to safely perform mechanical installation of the turbine belonging to the D3 product family in accordance with the relevant Siemens safety and technical guidelines.

Technician

Validity period
No expiry

2 days

DK

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Training SE-P-08450

ODI D6 / D7 Operation during installation

Purpose

To enable the technician to operate the D6 / D7 Siemens Gamesa Wind Turbine during installation in a safe manner using the available documentation and selected tools by Siemens Gamesa.

Who should attend

Mandatory:
All installation personnel, Siemens Gamesa and contractors, involved with the new installation of SWT D6 / D7 turbines.
Optional:
Service and new unit support and monitoring groups.

Objectives

To get a better understanding of the turbine building, knowledge of how to establish a D6 / D7 mill and ensure proper use of diverse tools, safety equipment and manuals and ensure the correct work with electricity and hydraulics etc.

Knowledge:

- Generator turning tools (for rotor lift and main bearing rotation during transport);
- Connect the auxiliary generator for temporary power supply, light, plug;
- Operate hydraulic systems for pitch, brake and LS locks;
- Safety precautions during mounting of the hub, to the nacelle;
- Set the turbine in and out of idle mode;
- Preparation of the SICS Hub and use of the external Pumping Unit and Tool F. Hub Service SICS;
- Use of Installation Documentation and checklist;
- Preparation of nacelle & cooling system;
- Stopping and starting a turbine that produces electricity;
- Basic Work on electrical installations;
- Cable work in the D6 / D7 and mounting of helihoist, wind sensors and navigation light;
- Lifting Operations Standard.

Technician

Validity period
No expiry

4.5 days

UK

Language	**EN**
Theory (%) / practice (%)	**60/ 40**
On site	**yes**

Heavy Lift

Training SE-P-85100

Blade Clamper

Purpose

The Blade Clamper is a piece of equipment that plays an important role in rotor installation or dismantling operations here at Siemens Gamesa. The Blade Clamper is designed to safely support a blade rotor for mounting or dismounting from the nacelle of a wind turbine.

Who should attend

This e-learning course is specifically provided for rotor installation and dismantling crew members, including blade clamper operators, as part of their requirements before undertaking a hands-on training exercise.

Objectives

This course will discuss how to properly use the blade clamper, from preparation and operation to handover to the next site.
SGRE introduces this e-learning in an effort to promote safe operation, avoid incidents, and accomplish "zero harm" in wind turbine construction.

Technician

Validity period 1 year

1.5 hours

E-learning

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Customer Orientation Course

Training SE-P-35730

Customer Orientation - Geared Drive

Purpose
The overall purpose of the course is to provide customers with an orientation regarding geared turbines, Siemens Gamesa Wind Service offerings and Siemens Gamesa Wind Service in general.

Who should attend
The course is intended for external customers with an active service contract, may it be first, second or third party with focus on management, coordinators, team leads etc.

Objectives
Upon completion of the course the participants will know about:
- SCADA;
- Diagnostic Center;
- Wind App;
- Turbine Systems;
- Business Improvement;
- Production Facility;
- Siemens Gamesa Services;
- Blades;
- Zero Harm;
- IEC Standards;
- Rescue Demonstration.

Competencies
Upon completion of the course the participants will not have obtained any competencies.

Customer Orientation Course

Validity period
No expiry

3.5 days

DK

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**yes**

Training SE-P-35700

Customer Orientation - Small Direct Drive

Customer Orientation Course

Validity period No expiry

3.5 days

DK

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**yes**

Purpose

The overall purpose of the course is to provide customers with an orientation regarding small direct drive turbines, Siemens Gamesa Wind Service offerings and Siemens Gamesa Wind Service in general.

Who should attend

The course is intended for external customers with an active service contract, may it be first, second or third party.

Objectives

Knowledge:

- SCADA;
- Diagnostic Center;
- Wind App;
- Turbine Systems;
- Business Improvement;
- Production Facility;
- Siemens Gamesa Services;
- Blades;
- Zero Harm;
- IEC Standards;
- Rescue Demonstration.

Competencies

The course is based on a "show and tell" basis and will not provide any competencies for the participant.

Training SE-P-35750

Customer Orientation - Large Direct Drive

Customer Orientation Course

Validity period No expiry

3.5 days

DK

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**yes**

Purpose

The overall purpose of the course is to provide customers with an orientation regarding large direct drive turbines, Siemens Gamesa Wind Service offerings and Siemens Gamesa Wind Service in general.

Who should attend

The course is intended for external customers with an active service contract, may it be first, second or third party with focus on management, coordinators, team leads etc.

Objectives

Knowledge:

- SCADA;
- Diagnostic Center;
- Wind App;
- Turbine Systems;
- Business Improvement;
- Production Facility;
- Siemens Gamesa Services;
- Blades;
- Zero Harm;
- IEC Standards;
- Rescue Demonstration.

Competencies

Upon completion of the course the participants will not have obtained any competencies.

Training SE-P-xxxxx

Product Familiarization Training - Gamesa Technology

Purpose

Siemens Gamesa offers a unique chance for customers to learn about the wind turbine technologies.

Who should attend

The training is intended for customers seeking to become knowledgeable and gain insights into the Gamesa Wind turbine technology.

Objectives

- Training mainly focuses on the systems and functions of the components. The Training will guide the participants through the capabilities and features of the Gamesa wind turbines.
- The participants will be introduced to the components, systems and operational maintenance aspects of the turbine.

General information is provided to the participant on the topics of:

- Mechanical and hydraulic systems
- Gearbox
- Electrical components
- Generator
- Converter
- Wind turbine control procedures
- Electrical schematics

Customer

Validity period
No expiry

4.5 days

SP

Language	**EN - SP**
Theory (%) / practice (%)	**80 / 20**
On site	**yes**

Blade

Training SE-P-03010

Rope Access SPRAT Level 1

Purpose

The purpose of a SPRAT Level 1 course is to educate a person basic techniques, user inspection, personal responsibilities and awareness about rigging. Furthermore, it is intended to create awareness and explain the complexity of performing a rescue, before being a part of the rescue setup in a rope access team. The course is meant to for a person, who does not have any knowledge in rope access.

Who should attend

The course is aimed for people, who want to start a rope access career.

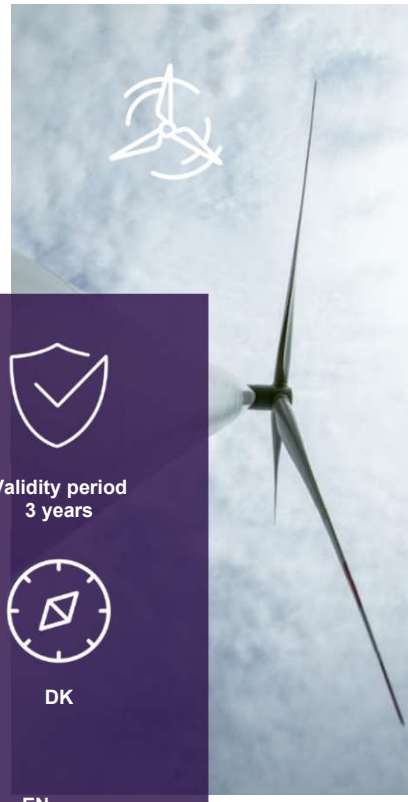
Objectives

Knowledge:

- Simple mechanical advantage systems.

Skills:

- Performing a user equipment inspection;
- Working with job safety;
- Tying different knots;
- Using back up devices;
- Using descend and ascend;
- Using work seat;
- Passing a knot - rope to rope transfer;
- Passing a deviation - short/long rebelay;
- Passing an edge;
- Making a simple structural anchor;
- Belaying with communication;
- Lowering.



Blade Technician

Validity period 3 years

4.5 days

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-03020

Rope Access SPRAT Level 2

Purpose

The purpose of a SPRAT Level 2 course is to educate a person (with a minimum of 500 log rope hours and minimum 6 month experience) to work as a Rope Access Lead Technician and assist the Rope Access Supervisor on site.

Who should attend

The course is aimed for people, who want to improve their rope access skills, knowledge and start assisting the rope access supervisor.

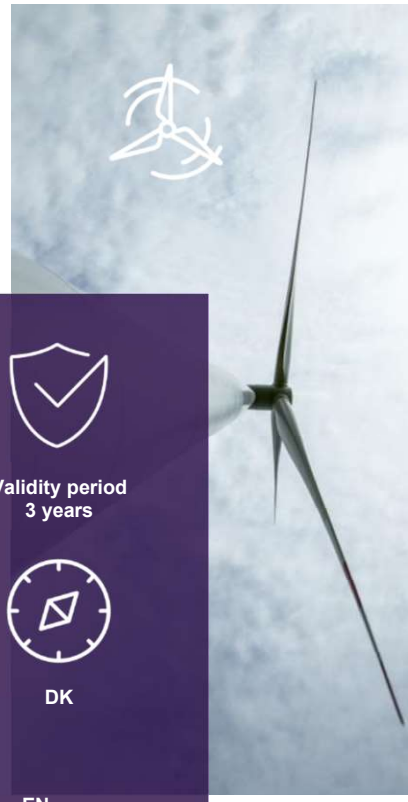
Objectives

Knowledge:

- Rescue considerations.

Skills:

- All skills from Level 1;
- Perform rigging and system dynamics;
- Tie knots and hitches;
- Make loud - sharing anchors;
- Make a pull - though anchor;
- Aid climb;
- Pick - off casualty in ascent;
- Rescue hauling with mechanical advantage systems.



Blade Technician

Validity period 3 years

4.5 days

DK

Language	**EN**
Theory (%) / practice (%)	**20/ 80**
On site	**yes**

Training SE-P-03030

Rope Access SPRAT Level 3

Purpose

The purpose of a SPRAT Level 3 course is to certify a person as a Rope Access Lead Technician. After passing the course, the participant will obtain the status of a Rope Access Supervisor.

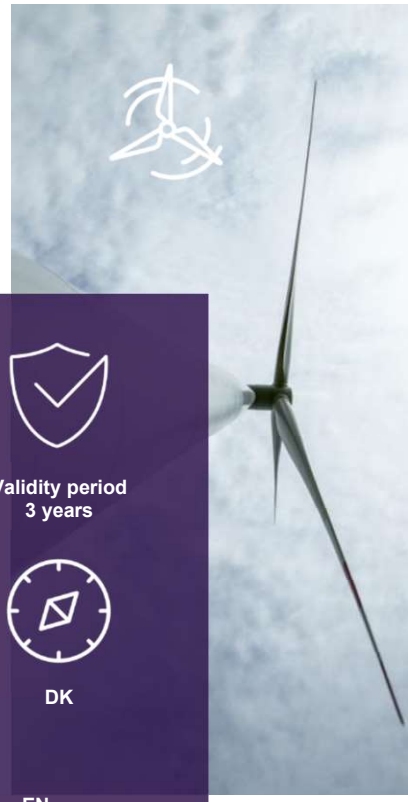
Who should attend

The course is aimed for person, who is going to work as a Rope Access Supervisor.

Objectives

Knowledge and skills:

- All skills from Level 1 - 2;
- Understanding of the roles and responsibilities;
- Work with management and communication;
- Perform a equipment use and inspection;
- Make job safety analysis;
- Perform rigging and system dynamics;
- Tie knots and hitches;
- Make loud - sharing anchors;
- Pick - off rescue of casualty while negotiating obstacles;
- Rescue from aid traverse;
- Make guidelines and high lines.



Blade Technician

Validity period 3 years

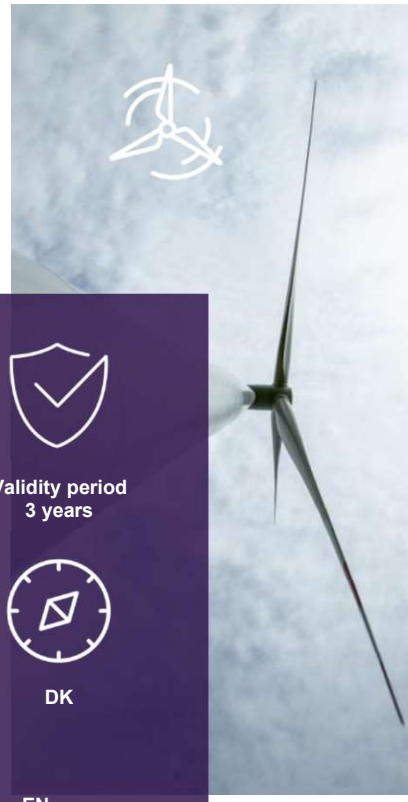
5 days

DK

Language	**EN**
Theory (%) / practice (%)	**20/ 80**
On site	**yes**

Training SE-P-03040

Rope Access SPRAT Level 3 Refresher



Purpose

The purpose of a SPRAT Level 3 Refresher course is to recertify a person with a SPRAT Level 3 certificated.

Who should attend

The course is aimed for people, who need to be certified to work as a SPRAT Rope Access Supervisor.

Objectives

Skills:

- All skills from Level 1 – 2;
- Understanding of the roles and responsibilities;
- Work with management and communication;
- Perform a equipment Use and inspection;
- Perform rigging and system dynamics;
- Tie knots and hitches;
- Make loud - sharing anchors;
- Pick - off rescue of casualty while negotiating obstacles;
- Rescue from aid traverse;
- Make guidelines and high lines.

Blade Technician

Validity period 3 years

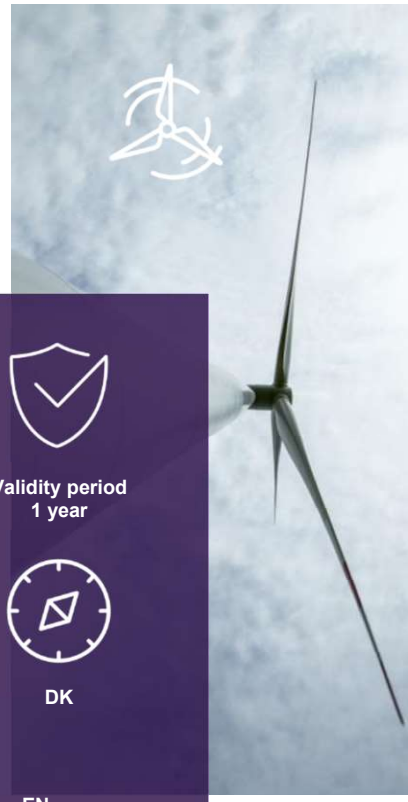
3 days

DK

Language	**EN**
Theory (%) / practice (%)	**25/ 75**
On site	**yes**

Training SE-P-03060

Rope Access Training and Certification Basic



Purpose

The purpose of the training and certification course is to give the participants the necessary skills to carry out safe rescues and work on Siemens Gamesa wind turbines. This is done by theoretical and practical exercises.

Who should attend

The course is aimed for people working for Siemens Gamesa or for sub contractor, who would like to gain knowledge and skills in order to work as a Rope Access Technician on SGRE wind turbines.

Objectives

Knowledge:

- Working in long ropes;
- Using ring-rope / rope bags;
- Using tools and equipment during work;
- Onsite equipment documentation;
- WPA / toolbox talk;
- Siemens Gamesa work instruction.

Skills:

- Tie a HMS descend friction knot;
- Backup-rope tight;
- Rig rope on a Siemens Gamesa wind turbine;
- Long rope pick off - casualty in ascent mode;
- 20 degrees out of vertical - rescue performed from above;
- Side by side connected with ring rope from below;
- Exit the nacelle down over the spinner.

Blade Technician

Validity period 1 year

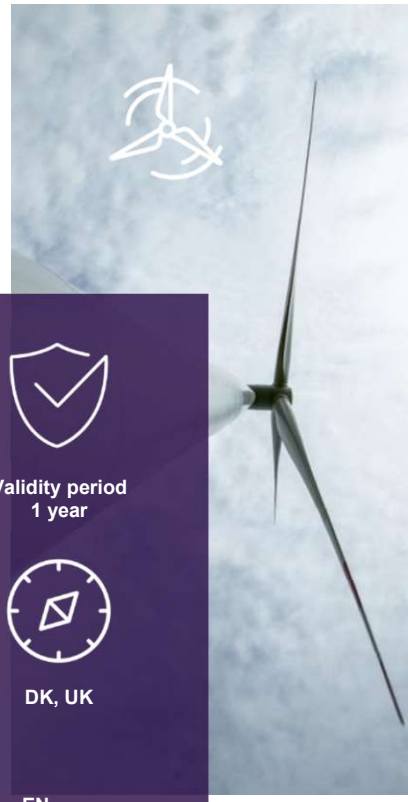
3 days

DK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-03360

Rope Access Training and Certification Basic Refresher



Purpose

The purpose of the training and certification basic refresher course is to give the participant the necessary skills to carry out safe rescues and work on Siemens Gamesa wind turbines. The course is based on theory and practical exercises.

Who should attend

Mandatory for Rope Access technicians.

Objectives

Knowledge and skills:

- How to work in a rope access team of two or more using long ropes and ring-rope;
- Use for rope bags during a rescue or when working in windy conditions;
- Rope access WPA - work place assessment / toolbox talk;
- How to work and understand Siemens Gamesa work instructions;
- How to exit down over the spinner;
- How to tie a HMS descend friction knot;
- How to keep backup-rope tight;
- How to rig rope systems on a Siemens Gamesa wind turbine;
- How to perform a long rope pick off - casualty in ascent mode - pick off from below and side by side connected with ring rope.

Competencies

How to work as a rope access technician on a Siemens Gamesa wind turbine in long ropes.

Blade Technician

Validity period 1 year

8 hours

DK, UK

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Training SE-P-09600

ActSafe ACC II Ascender for Equipment lifting purpose

Purpose

The purpose of this course is, by theoretical and practical training to give delegates skills and competence to safely operate, maintain and inspect the ActSafe II Ascender and components in equipment lifting operations.

Who should attend

Mandatory for personnel working in the wind industry with the need for using the ActSafe ACC II Ascender for lifting purpose.

Objectives

Knowledge and skills:

- Select, inspect and mounting suitable rope and components for lifting purposes;
- Inspect charge and correct change batteries.
- Inspect and mounting of Siemens Gamesa ladder hanger as anchoring device;
- Select suitable anchor points for ActSafe (not anchor points for Fall Arrest);
- Select, inspect and use of certified lifting bags (all lifts must be in lifting bags);
- Pre/post inspection and general information on ActSafe;
- Emergency descend procedures(regarding battery charging) and remote control;
- Rigging for hoist to platform.(running ascender);
- Change of rigging at platform.(top rigged);
- Top rigged at crane (rope lowered from nacelle);
- Rigging rope in tower, using guideline from platform to hoist rope outside ladder;
- Equipment specifications, rope, pulley, karabiners, shackles, MBF, SWL/WLL lifting limits.

Blade Technician

Validity period 2 years

4 hours

DK, DE, UK

Language	**EN**
Theory (%) / practice (%)	**25/ 75**
On site	**yes**

Spot repair on metal and epoxy safety

Blade Technician

Validity period No expiry

3.5 days

UK

Language	EN
Theory (%) / practice (%)	70/ 30
On site	yes

Purpose

The purpose of this training is to make it possible for the delegate to achieve knowledge, skills and attitudes regarding safety and workmanship to understand and complete a spot repair on metal as specified in Appendix A5.1 in Siemens Gamesa Purchasing Specification ZPS1009606 Coating Systems (for corrosion class C5M high). Furthermore the delegate must be thoroughly versed in Siemens Gamesa Work Instruction ZWI1031806-Repair of paint on steel - on-site (new no. D1197746), so that they are able to complete a spot repair on metal fully documented. The course has also the purpose to provide the delegate knowledge about personal safety when working with epoxy resins and isocyanides in a safe and sound way. (In DK according to §5 in the Danish Working Environment Authority act no 292 from April 26, 2001).

Who should attend

This training is mandatory for Siemens Gamesa employees, customers and 3rd parties whose duties include repair of paint systems on structures with high corrosion protection demands.

Objectives

- Demonstrate knowledge about working with epoxy resins and isocyanides by showing correct behavior in the practical exercises;
- Explain the request from Appendix A5.1. concerning minor spot-repair;
- Demonstrate the ability to complete a spot repair as specified in Appendix A5.1;
- Show correct documentation of the paint repairs in the practical exercises;
- Demonstrate the ability to use correct personal protection equipment (PPE) during the practical exercises according to MSDS sheets;
- Show, during the practical exercises, that he/she is able to perform correct paint repair workmanship;
- Show good attitude when using safety equipment and personal protection equipment (PPE).

Competencies

- Repair of paint systems on structures with high corrosion protection demands according to SGRE's Purchasing Specification ZPS1009606 Coating Systems (Appendix A5.1) and Work Instruction ZWI 1031806 Repair of paint on steel - on-site (new no. D1197746);
- Able to work with epoxy resins and isocyanides in a way that is appropriate from a point of view of health and safety.

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Training SE-P-17775

Spot paint on metal and composite surfaces

Purpose

The overall purpose of this course is to enable the participant to achieve knowledge, skills and attitudes regarding Epoxy safety and perform a repair whit 2 component paint on steel and composite.

Who should attend

SGRE employees and subcontractors. Working whit spot paint on steel and composite.

Objectives

Knowledge:

- Use of Safety Data Sheets (SDS);
- Working safe with primer, epoxy resins and isocyanides by showing correct behavior in the practical exercises;
- Knowledge of the damaged level.

Skills:

- Demonstrate how to work in a safe way mixing and handling 2-component material;
- Demonstrate the ability to use correct personal protection equipment (PPE) during the practical exercises;
- Demonstrate how to clean a surface;
- Demonstrate how to apply primer and paint on steel or composite;
- Demonstrate how a coating is tested with the use of microns gauge;
- Demonstrate the correct using a sander and a grinder;
- Demonstrate marking a repair;
- Demonstrate how to use a hygrometer, thermometer, model 319 T dew point, IR thermometer wet film thickness gauge;
- Demonstrate how to carry out a repair according to relevant Work Instructions. (WI);
- Demonstrate how to document the repair with the use of (Photo card, check lists, etc.);
- Demonstrate how to perform correct paint repair during the practical exercises.

Competencies

Execute repairs according to relevant work instructions and checklists

Work instruction

- D1197746 Repair paint on steel onsite
- D1197678 Application of topcoat

Checklists CH

- D1204055 Repair paint on steel onsite
- D1459277 Application of topcoat

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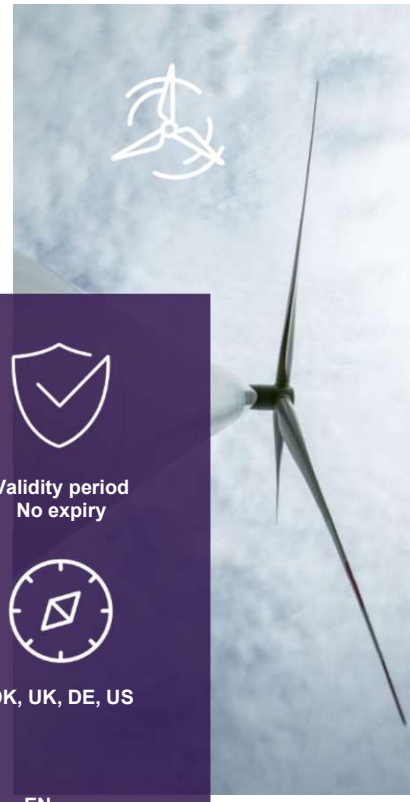


Blade Technician

Validity period No expiry

2 days

DK, UK, DE, US

Language	**EN**
Theory (%) / practice (%)	**40/ 60**
On site	**yes**

Training SE-P-17600

Aerodynamic Power Upgrade

Purpose

This training will enable the participant, on the background of knowledge of the composite blade structure, aerodynamic and optimization conditions, in collaboration with colleague, to organize and perform installation of Dino tails, Dino Shells and vortex generators. The participant is able to perform the job either on blades on the ground or via PRAT technique on blades that are installed on a wind turbine. The participant is aware of and can under appropriate climatic conditions implement, test and document the entire optimization task.

Who should attend

The training is intended for Siemens Gamesa employees and 3rd parties whose duties include installation of the Aerodynamic Power Upgrade components on Siemens Gamesa blades.

Objectives

Knowledge and skills:

- Blade structure and design principles and specific to the current blade types;
- The result of the blade optimization;
- Relevant Siemens Gamesa Work Instructions, checklists, etc.;
- Relevant safety data sheets;
- Material knowledge (in the work instructions used materials);
- Material knowledge (DinoTails ®, DinoShells ® and Vortex Generator);
- Work-related process and climate conditions influence;
- Surface types and adherence conditions;
- Typical errors (e.g. wrong position and gluing);
- Using proper safety precautions when using the materials (in the work instructions used materials);
- Measuring up the actual;
- Using proper gluing technique and process conditions cure times, etc.
- Control of the work performed;
- Completing documentation of the work performed;
- Registration of the new blade specifications internally in Siemens Gamesa.

Competencies

Upon completion the participants will be qualified to install DinoTails ®, DinoShells ® and Vortex Generators on Siemens Gamesa blades.

Blade Technician

Validity period 2 years

2 days

DK

Language	**EN**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Training SE-P-17570

Power edge application

Purpose
The overall purpose of the course is to ensure that the participants are able to apply the leading edge protection (Power Edge) on blades with eroded leading edge.

Objectives
- Demonstrate mounting the soft shells and tip soft shells (Power Edge);
- Demonstrate correct use of the vacuum heating blanket and the associated controller;
- Demonstrate understanding of the available work instructions / checklists and perform the work according to the instructions /checklists;
- Show how to document the application off the leading edge protection;
- Demonstrate the correct use of PPE.

Competencies
Upon completion of the course the participants have obtained the following competencies in applying soft shells and tip soft shells (Power Edge) in accordance with applicable documentation (work instructions, check lists etc.).

Blade Technician

Validity period No expiry

2 days

DK

Language	**EN**
Theory (%) / practice (%)	**75/ 25**
On site	**yes**

Training SE-P-17560

Leading edge repair

Purpose

The purpose of this training is to enable the participant to carry out repair of eroded leading edges on Siemens Gamesa wind turbine blades.

Who should attend

The training is intended for Siemens Gamesa employees and subcontractors whose duties include repair on eroded leading edges on Siemens Gamesa wind turbine blades.

Objectives

- Perform cleaning the leading edge by using steam cleaner and the surface cleaner;
- Show how to determine concentration of soluble salts on the blade surface by using the Bresle test method;
- Assess the leading edge repair needs (repair level);
- Demonstrate the marking up the leading edge working area;
- Demonstrate applying filler with the LEP application tool on the leading edge so that the right leading edge profile appears;
- Demonstrate understanding of the available work instructions and perform the work according to the instructions;
- Demonstrate knowledge about the influence of temperature, dew point and the relative humidity on the quality of the repair;
- Show how to document the level of the leading edge erosion and the subsequent repair;
- Demonstrate the correct use of PPE;
- Demonstrate the correct sorting of waste.

Competencies

Upon completion of the course the participants have obtained the following competencies in repair of erosion on leading edges with filler in accordance with applicable documentation (work instructions, check lists etc.).

Blade Technician

Validity period No expiry

2 days

DK

Language	**EN**
Theory (%) / practice (%)	**75/ 25**
On site	**yes**

Training SE-P-20900

EPOXY safety

Purpose
The aim of this training is to introduce the participants how to perform work tasks with epoxy and isocyanides safely with reference to the valid Danish regulations.

Who should attend
It is intended for Siemens Gamesa employees whose tasks include working with epoxy or isocyanides materials.

Objectives
Knowledge and skills:
- Legal basis;
- Product specific knowledge;
- Correct use of personal protective equipment;
- Risk assessment.

Blade Technician

Validity period No expiry

2 days

DK

Language	**DK**
Theory (%) / practice (%)	**50/ 50**
On site	**yes**

Blade B - Basic blade repair

Purpose

The purpose of this training is to enable the participants to carry out a complete repair of non-structural damage and faults on SWP blades in accordance with ZWI D1683397 Blade Non-Structural Repair Processes.

Who should attend

The training is intended for Siemens Gamesa Renewable Energy employees, customers and 3rd parties whose duties include repair of minor blade damages.

Objectives

Knowledge and skills:

- Use personal safety in relation to work with epoxy resins and isocyanates
- Assess the extent of laminate damage in blade structures and assessing technical aspects in connection with repair on the basis of knowledge about thermoset plastics and composite materials and the build-up of wind turbine blades.
- Explain the physical and chemical aspects of the work environment.
- Work hands-on with mixing, handle, and use suitable epoxy systems for hand laying, filling and painting.
- Choose and use the correct personal protective equipment (PPE).
- Prepare / complete including marking up of work area, waste sorting / disposal and planning of task including workflow and preparation of necessary materials
- Repair of minor trailing edge damage.
- Take out and close sample cuts.
- Take TG's (curing sample).
- Use of heating blankets.
- Use blade documentation (Work Instruction, Check list, Control Instruction, Safety Data Sheet (SDS), etc.
- Replacement of Aerodynamic Power Upgrade components (Vortex generator, DinoTails, DinoShells)
- Perform quality and measurement control

Competencies

To repair blade damages in accordance with ZWI D1683397 Blade Non-Structural Repair Processes.

Comments: No changes from normal training center training.

Blade Technician

Validity period No expiry

10 days

US

Language	**EN**
Theory (%) / practice (%)	**30/ 70**
On site	**yes**

Blade C Refresher (Written test)

Purpose

This written e-learning test is for technicians who have achieved the SE-P-16600 Blade C or SE-P-16550 Blade C competency test certificate and need a recertification. The recertification for Blade C certificate is as the following: One year after having passed the SE-P-16600 Blade C Course or SE-P-16550 Blade C competency test the technician must pass this written test to maintain the certificate. After two years the technician must pass a two-day class room course SE-P-16500. After three years the technician must pass this SE-P-16250 written test again and after four years the technician must pass a two-day class room SE-P-16500 course and so on.

Who should attend

This course is intended for Siemens Gamesa Renewable Energy's and approved subcontractor's employees whose duties include advanced repair of complicated blade structural damages on SGRE blades.

Objectives

Knowledge and skills:
This written e-learning test verifies that the Blade C certified technician has the knowledge's to work according to relevant (Work Instructions (WI) and Checklists (CH) which are mentioned in workflow scenarios II in Work Instruction D1464420 Introduction to blade structural repair.) and still have adequate. Knowledge and skills as gained on the SE-P-16600 Blade C or SE-P-16550 Blade C competency Test.

Competencies

To execute repairs according to relevant Work Instructions (WI) and Checklists (CH) which are mentioned in workflow scenarios II in Work Instruction D1464420 Introduction to blade structural repair .

Blade Technician

Validity period 1 year

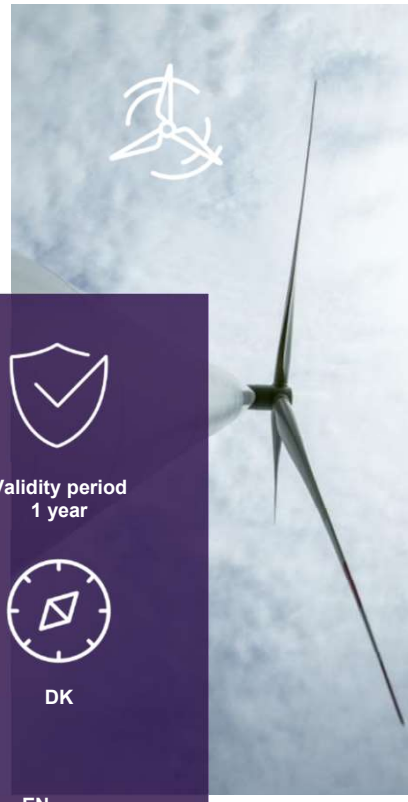
30 minutes

DK

Language	**EN**
Theory (%) / practice (%)	**100/ 0**
On site	**no**

Training SE-P-16500

Blade C Refresher



Purpose

The overall purpose of the course is to enable the participant to expand their knowledge and skills to include the workflow scenario II according to Work Instruction D1464420 Introduction to blade structural repair.

Who should attend

This course is intended for Siemens Gamesa Renewable Energy's and approved subcontractor's employees whose duties include advanced repair of complicated blade structural damages on SGRE blades.

Objectives

Knowledge and skills:

- Explain with own words the structure of the Integral Blade® and the relation between inner and outer laminate by analyzing the laminate plan.
- Demonstrate safe and proper handling of grinding/sanding machines and the usage of appropriate PPE according to relevant safety rules in the work instructions.
- Practice repair quality as specified in the work instructions
- Discuss and argue why the repair is of bad quality.
- Demonstrate how to plan the work effectively so that the work gets done correctly in world quality and in the shortest possible time according to time limits given by the instructor.
- Show how to use appropriate PPE according to relevant work instructions with respect to the material (filler paint and resin etc.) being used.
- Demonstrate how to document (Photo card, check lists, etc.) the repair work both before during and after repair work.
- Show how to work safely with epoxy, mixing 2-component material and handle it as specified in the relevant Safety Data Sheets (SDS).
- Demonstrate and perform quality control on own and others' fiberglass repair work with relevant technical explanation according to work instructions.
- Demonstrate correct sorting of waste.

Competencies

To execute repairs according to relevant Work Instructions (WI) and Checklists (CH) which are mentioned in workflow scenarios II in Work Instruction D1464420 Introduction to blade structural repair

Blade Technician

Validity period 1 year

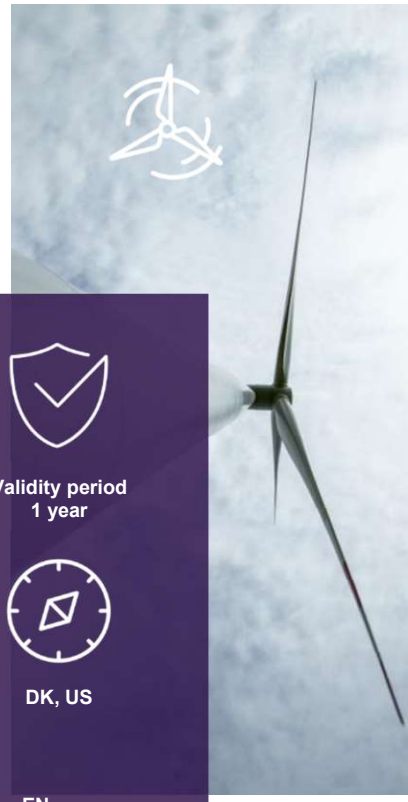
2 days

DK

Language	**EN**
Theory (%) / practice (%)	**25/ 75**
On site	**yes**

Training SE-P-16550

Blade C Competency test



Purpose

The overall purpose of the course is to enable the participant to expand their knowledge and skills to include the workflow scenario II according to Work Instruction D1464420 Introduction to blade structural repair.

Who should attend

This course is intended for Siemens Gamesa Renewable Energy's and approved subcontractor's employees whose duties include advanced repair of complicated blade structural damages on SGRE blades.

Objectives

Knowledge and skills:

- Explain with own words the structure of the Integral Blade® and the relation between inner and outer laminate by analyzing the laminate plan.
- Demonstrate safe and proper handling of grinding/sanding machines and the usage of appropriate PPE according to relevant safety rules in the work instructions.
- Practice repair quality as specified in the work instructions
- Discuss and argue why the repair is of bad quality.
- Demonstrate how to plan the work effectively so that the work gets done correctly in world quality and in the shortest possible time according to time limits given by the instructor.
- Show how to use appropriate PPE according to relevant work instructions with respect to the material (filler paint and resin etc.) being used.
- Demonstrate how to document (Photo card, check lists, etc.) the repair work both before during and after repair work.
- Show how to work safely with epoxy, mixing 2-component material and handle it as specified in the relevant Safety Data Sheets (SDS).
- Demonstrate and perform quality control on own and others' fiberglass repair work with relevant technical explanation according to work instructions.
- Demonstrate correct sorting of waste

Competencies

To execute repairs according to relevant Work Instructions (WI) and Checklists (CH) which are mentioned in workflow scenarios II in Work Instruction D1464420 Introduction to blade structural repair.

Blade Technician

Validity period 1 year

3 days

DK, US

Language	**EN**
Theory (%) / practice (%)	**5 / 95**
On site	**yes**

Blade C: Repair of complicated blade structural damage 15 days

Blade Technician

Validity period 1 year

15 days

DK, US

Language	EN
Theory (%) / practice (%)	25/ 75
On site	yes

Purpose

The overall purpose of the course is to enable the participant to expand their knowledge and skills to include the workflow scenario II according to Work Instruction D1464420 Introduction to blade structural repair.

Who should attend

This course is intended for Siemens Gamesa Renewable Energy's and approved subcontractor's employees whose duties include advanced repair of complicated blade structural damages on SGRE blades.

Objectives

Knowledge and skills:

- Explain with own words the structure of the Integral Blade® and the relation between inner and outer laminate by analyzing the laminate plan.
- Demonstrate safe and proper handling of grinding/sanding machines and the usage of appropriate PPE according to relevant safety rules in the work instructions.
- Practice repair quality as specified in the work instructions
- Discuss and argue why the repair is of bad quality.
- Demonstrate how to plan the work effectively so that the work gets done correctly in world quality and in the shortest possible time according to time limits given by the instructor.
- Show how to use appropriate PPE according to relevant work instructions with respect to the material (filler paint and resin etc.) being used.
- Demonstrate how to document (Photo card, check lists, etc.) the repair work both before during and after repair work.
- Show how to work safely with epoxy, mixing 2-component material and handle it as specified in the relevant Safety Data Sheets (SDS).
- Demonstrate and perform quality control on own and others' fiberglass repair work with relevant technical explanation according to work instructions.
- Demonstrate correct sorting of waste

Competencies

To execute repairs according to relevant Work Instructions (WI) and Checklists (CH) which are mentioned in workflow scenarios II in Work Instruction D1464420 Introduction to blade structural repair.

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Demand tool

Request your demand via the Siemens Gamesa demand tool and let Siemens Gamesa fulfill your priorities.

In order to use this functionality, you need to fill out a request. Please contact the Training Center.

Important: Not all listed courses for the different profiles - Technician, Maintenance Technician and Troubleshooter, are mandatory. The specific courses depend on the site and turbine type. We have listed the courses based on which profile they belong to, but your site and turbine type will determine the relevant courses for you. The relevant courses will be listed in the training schedule agreed, as a part of the contract.

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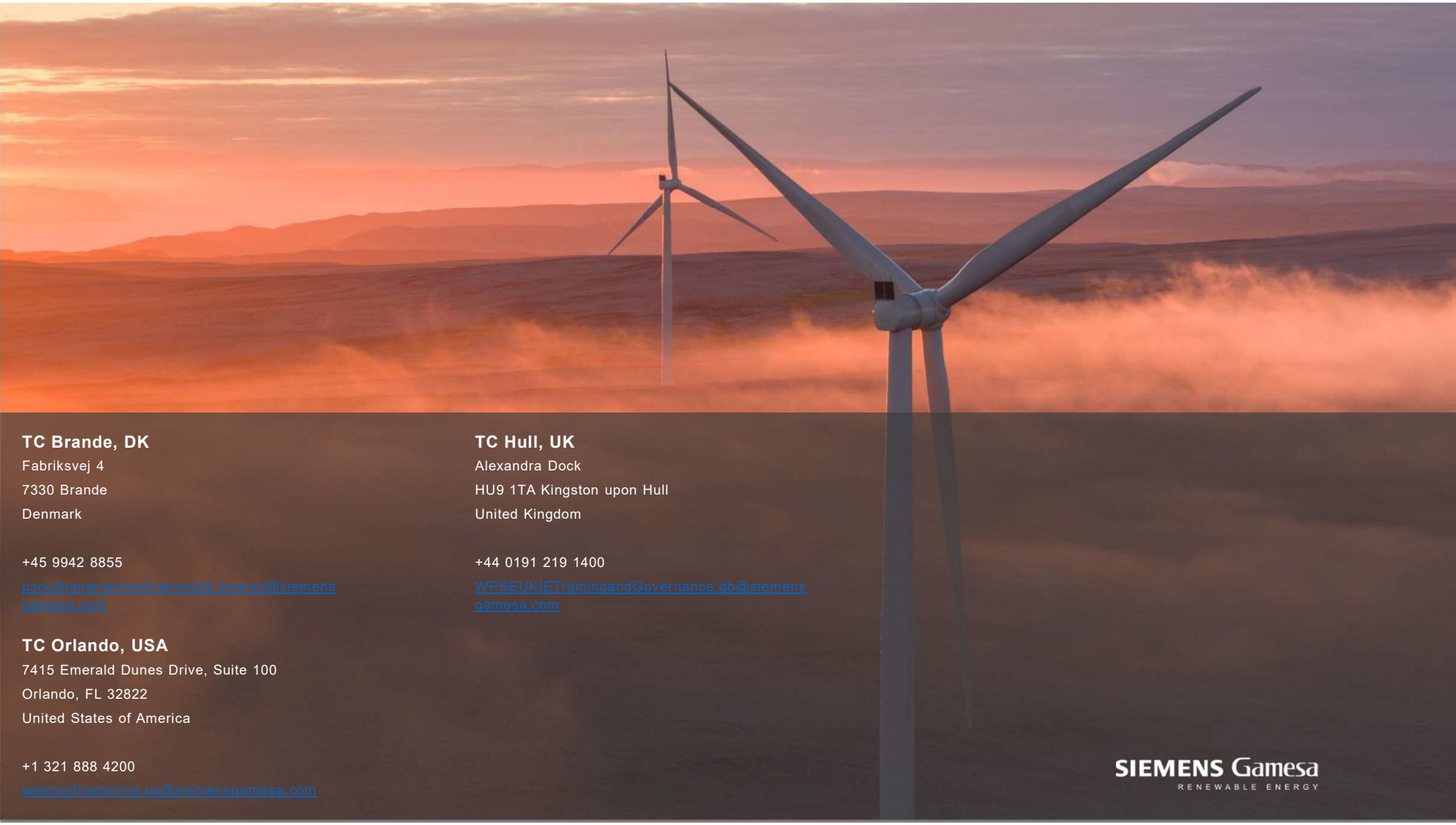

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