

Guidance on the application of Wind Turbine Safety Rules

Fourth edition



In partnership with



GUIDANCE ON THE APPLICATION OF WIND TURBINE SAFETY RULES

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INTRODUCTION

These guidance notes are intended to assist in the application of the 4th Edition 2021 Wind Turbine Safety Rules, (subsequently referred to as the Wind Turbine Safety Rules, WTSR or simply the Rules). No attempt is made to offer additional guidance to a requirement which is thought to be self-evident; further explanation is offered when it is thought to be helpful in the interpretation of a particular requirement.

This guidance should be read in conjunction with the Rules, and any guidance will have reference to the relevant section.

Persons who are responsible for the implementation of the Wind Turbine Safety Rules are advised that a satisfactory procedure should be adopted to enable amendments or revisions to be incorporated within copies of the Rules under their control.

In addition guidance has been included on:

- (i) completion of approved written procedures (AWPs), and
- (ii) training of persons with designated responsibilities under the Rules

The guidance on the 'completion of AWPs' appears as Addendums B1 and B2 which aim to identify the generally accepted good practice for their completion.

The Wind Turbine Safety Rules Support Procedure P6, 'Procedure for appointment of persons', defines minimum standards for training. Guidance on the structure of a formal training programme to achieve these standards is contained in Addendum C1 of this Guidance.

Throughout the Wind Turbine Safety Rules the term 'work or testing' has been used. Under H&S Law the term 'work' includes testing, but in order to clarify this point both terms have been adopted. The WTSR are in reality trying to emphasise the point that testing must be treated in the same way as work and therefore clarify that the same safety precautions are required for testing as are required for work. To restate the point, the Wind Turbine Safety Rules must be applied equally whether carrying out work or whether undertaking testing.

WIND TURBINE SAFETY RULES SUPPORT DOCUMENTATION

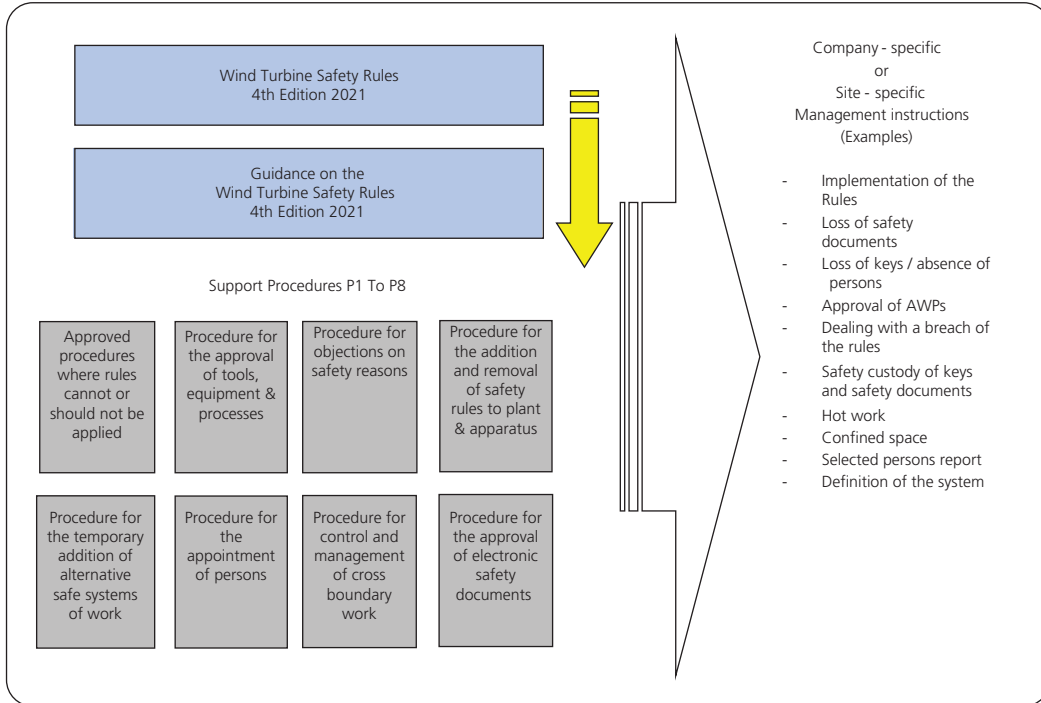
In addition to the Wind Turbine Safety Rules themselves, and this guidance document, a number of supporting documents exist. Also, the rules require management instructions (MIs) to be prepared to complement the Rules, Guidance and Supporting Procedures.

The 8 Supporting Procedures are:

P1	Procedure for Approval of General Provisions Special Instructions (GP3) and Other Procedures
P2	Procedure for Approval of Tools, Equipment and Processes
P3	Procedure for Objection on Safety Reasons
P4	Procedure for the Addition and Removal of Safety Rules to Plant and LV apparatus
P5	Procedure for the Temporary Addition of Alternative Safe Systems of work
P6	Procedure for Appointment of Persons
P7	Procedure for the Control and Management of Cross Boundary Safety Precautions Between the Wind Turbine Safety Rules and Other Safety Rules
P8	Procedure for Approval of Electronic Safety Document Systems

Management Instruction (MI) – A procedure for use at an individual wind farm location or series of wind farm locations, that documents the Health and Safety Management Systems of Company 'A' that are to be applied to meet specified requirements.

Diagram showing the relationship between Wind Turbine Safety Rules, the Wind Turbine Safety Rules Guidance Document, the Wind Turbine Safety Rules Support Procedures and Management Instructions, (see Annex D).



DEFINED TERMS

SHALL

Where 'shall' is used in these rules with no qualification, this indicates a mandatory requirement with no discretion permitted and no judgement to be made.

SHALL, WHERE PRACTICABLE

Where 'shall' is qualified only by the word 'practicable', a slightly less strict standard is imposed. It means that where it is possible to achieve in the light of current knowledge and invention but bearing in mind the hazards associated with work to be undertaken, then the requirement must be met. One is not allowed to avoid the requirement because of difficulty, inconvenience, or cost.

SHALL, WHERE REASONABLY PRACTICABLE

When 'shall where reasonably practicable' is used to qualify a requirement, then a judgement must be made as to what is reasonable, taking into account the magnitude of the risk on the one hand and the cost, time and trouble, or effort necessary for averting the risk on the other hand.

Guidance on the interpretation of the defined terms 'SHALL'; 'SHALL WHERE PRACTICABLE' AND 'SHALL WHERE REASONABLY PRACTICABLE'

The Wind Turbine Safety Rules are realistic in that the emphasis attached to the obligation to comply with any specific requirement takes account of the practical circumstances that can arise. It is therefore appropriate to give some explanation of the use of 'shall'; 'shall where practicable' and 'shall where reasonably practicable' when these terms are used in the Rules.

Where 'shall' is used with no other qualification this indicates a mandatory requirement to meet the obligation with no discretion permitted and no judgement to be made. For example, Wind Turbine Safety Rule A2.3 (ii) states that 'caution notices shall be affixed at all POI'. Therefore, in all cases involving work or testing on, or adjacent to, plant a caution notice must be attached to every point of isolation irrespective of the cost, time, trouble or effort in doing so.

Where the obligation is qualified only by the words 'where practicable' a slightly less strict standard is imposed. It means that where it is possible to achieve the requirement in light of current knowledge and invention, but bearing in mind the hazards associated with the work or testing to be undertaken, then the requirement must be met. It is not possible to avoid meeting the requirement on the grounds of difficulty, inconvenience, or cost. For example, Wind Turbine Safety Rule A2.3 (ii) states that 'When isolating devices are used they shall, where practicable, be immobilised and locked'. The use of the term 'shall where practicable' indicates the importance attached to meeting this requirement, but at the same time recognises that there may be some circumstances where it might not be possible to provide any additional assurance of safety by immobilising or locking an isolating device.

When 'shall where reasonably practicable' is used to qualify a requirement then a judgement must be made as to what is reasonable by taking into account the magnitude of the risk on one hand and the cost, time, trouble, or effort necessary to avert that risk on the other hand. It is very important that when the use of the term 'shall where reasonably practicable' introduces a measure of choice, clear instructions are given by management to all persons under its control, so that the judgement is made at an appropriate level and in a consistent manner.

POLICY, PHILOSOPHY AND PRINCIPLES OF THE WIND TURBINE SAFETY RULES

1 POLICY

The wording of the 'POLICY' section is offered as an example.

Each organisation should produce its own wording to reflect their individual company Health and Safety policy and satisfy its local legal obligations.

Company 'A' considers it a duty to ensure, in accordance with all applicable laws and legislation, so far as is reasonably practicable, the health, safety, and welfare at work of all employees. In particular the provision and maintenance of plant and systems of work that are, so far as is reasonably practicable, safe and without risks to health.

Under our policy statement, Company 'A' is dedicated to:

- Promote a healthy and safe work environment that engages and empowers employees in Health, Safety and Environmental matters.
- Ensure prevention of injuries and ill health in the workforce and its surroundings.
- Establish Health, Safety, Security and Social requirements and ensure that partners, suppliers, and contractors work in accordance with them.

All employees are responsible for:

- Cooperating with management and complying with the Company 'A' Health and Safety Management System, including these Wind Turbine Safety Rules.
- Taking reasonable care of their own health and safety at work, and that of others who may be affected by their acts or omissions.
- Reporting shortcomings in health and safety arrangements and any situation at work which presents serious and imminent danger to the health and safety of any individual.

Company 'A' is responsible for:

- Ensuring that the Wind Turbine Safety Rules are maintained and updated.
- Monitoring the effectiveness of the Wind Turbine Safety Rules as a part of the internal audit function.

GUIDANCE ON 'POLICY'

The wording offered in the Rules is a suggested example and tries to cover health and safety legal duties in all countries.

The exact wording for the 'Policy' section of the WTSR must be developed specifically by individual Company 'A' to adequately reflect its own company H&S Policy and in compliance with statutory duties. They must include all that is appropriate in order to demonstrate 'ownership' of their Wind Turbine Safety Rules.

2 PHILOSOPHY

- 2.1** Wind farms consist of items of low voltage (LV) electrical apparatus and mechanical plant, interconnected to form electro-mechanical systems. These systems, because of their electrical and mechanical characteristics, contain inherent dangers. The systems are designed so that when they are in their normal operating mode, they may be operated without danger if appropriate routine procedures and suitable tools/work equipment are correctly used.

When a competent technician is carrying out operational work or testing with the system in its normal operating mode, then this shall be done in accordance with routine operating procedures (ROPs).

- 2.2** When work or testing other than operation has to be carried out affecting the plant and LV apparatus and it is necessary to change from the normal operating mode or depart from ROPs, it is necessary to specify rules to achieve safety from the inherent dangers.

- 2.3** A typical wind farm consists of two distinct systems – the high voltage (HV) infrastructure, (parts of which may lie within the wind turbine structure but are not subject to these Rules), and the wind turbines with their associated plant and LV infrastructure, which are subject to these Rules. The boundary between these systems must be clearly defined in MIs for each site and will typically be located between the LV isolator(s) and the associated wind turbine generator (WTG) transformer.

- 2.4** For the HV infrastructure, a comprehensive and robust set of HV safety Rules must be implemented along the lines of electricity industry distribution or electrical and mechanical safety Rules or their approved equivalent.

- 2.5** There are some key criteria relating to wind turbines and the associated plant/LV infrastructure that allow the 'simpler' set of safety Rules described in this document to be applied:

Wind turbines are relatively simple systems, with each turbine on any particular site being a near-identical copy of its neighbours.

Persons who have been trained to a high degree of competence on those types of turbines and follow a set of task instructions normally issued by the manufacturer.

Persons generally work in small groups (usually in pairs) on often remote sites, and under such circumstances the most practicable approach is for them to apply any safety precautions themselves as part of the work package.

Work or testing on any one turbine is localised in its nature and can generally be carried out with no effect on others on the wind farm.

- 2.6** A further aspect taken into consideration in developing these safety Rules is the fact that a typical work package on a wind turbine consists of a number of smaller packages of work or testing, each potentially requiring slightly different safety precautions or, in some instances, the need to restore motive power at key points. Conventional permit for work systems have generally been developed for use on relatively complex systems and their use, while possible, does not lend itself to the types of work or testing involved on wind turbines. However, it should be emphasised that the Wind Turbine Safety Rules still require the same standard of safety to be achieved at each and every step of such work or testing. In addition, the Wind Turbine Safety Rules have been developed to formalise best practice across the industry while building on the existing competencies of individuals.
-

2.7 It should be noted that the application of any safe system of work normally involves a number of designated individuals, each of whom carries out a specified role. On occasions, in common with other safe systems of work, a small number of people may be involved in implementing the Wind Turbine Safety Rules on a single job and this means that one person may fulfil a number of roles – although extreme care must be taken to ensure that each is fulfilled correctly.

2.8 These Wind Turbine Safety Rules are based on a philosophy that the Rules should briefly and clearly specify those actions that must be implemented and identify those practices which should be followed in order to establish conditions in which persons who have to carry out work or testing on the plant and LV apparatus will be safeguarded from the inherent dangers, and to make them safe from the system.

2.9 Whenever work, (or testing), is carried out affecting plant and LV apparatus, which is part of the system, two types of danger may arise:

The first type is danger inherent in the system arising from the design function of the plant and LV apparatus, and this philosophy requires that the Rules, when implemented, will achieve the safety of persons at work from these inherent dangers, at the commencement and during all phases, of the course of work or testing.

The second type is danger arising from the working environment at, and in the vicinity of, the work point and not associated with the system. These Rules are not designed to specify the means of establishing safety from the second type of danger, which may arise whenever work or testing is done, for example from methods of work or testing, or means of access; however the Rules allocate responsibility for achieving safety from this type of danger.

2.10 To carry out work, (or testing), affecting plant and LV apparatus within a system, the procedure to be observed for each phase of the work or testing may be divided into the following stages:

- (i) Making available the plant and LV apparatus concerned for the work or testing required.
- (ii) Establishment of conditions to safeguard persons from the inherent dangers of the system.
- (iii) Execution of the work or testing required.
- (iv) Clearance of the plant and LV apparatus on completion or termination of the work or testing to confirm that it is in a safe condition for return to service.
- (v) Restoration of the plant and LV apparatus to its normal operational condition within the system.

Note: Stages (i) to (iv) may be repeated a number of times during any package of work or testing – depending on the complexity of the work or testing.

2.11 To achieve safety within the stages specified, these Rules require AWP's to be put in place and followed for each work package that, for each phase of the work or testing, describe how an AT shall:

- Transfer control from the operational controller (OC).
- Establish safe conditions for persons to work or test on the plant and LV apparatus.
- Either check that safe conditions have been established for work or testing on plant and LV apparatus which has been isolated from the system.

or

- Implement the appropriate specialised procedures which will be applied when work or testing has to be done on plant and LV apparatus which remains energised and then confirm in writing that it is safe for the commencement of work or testing.
- Supervise safety during the course of the work or testing.
- Confirm that the procedure is complete when the work or testing is finished (or terminated), before returning the plant/LV apparatus to an operational state and formally transferring control back to the OC.
- This is achieved by following ROPs containing detailed instructions for each step and having signature checkpoints at key points in the process.

2.12 The Rules for achieving the safety of persons at work from the inherent dangers of the system are limited, therefore, to specifying in an AWP:

- (i) The actions necessary to ensure safety during each of the stages described in which dangers may arise from the design function of the plant and LV apparatus
- (ii) The responsibilities of persons for ensuring safety during each of these stages from dangers which may arise from the design function of the plant and LV apparatus and, in relation to the general dangers arising whenever work or testing is performed, the Rules are limited to
- (iii) Identifying the person responsible for achieving safety from these general dangers.

The Rules will be supported by MIs, ROPs and AWP's that implement the Rules effectively and efficiently and ensure that the Rules are applied in a consistent manner throughout Company 'A'.

An AWP shall be created for each work package by a person (normally the external service provider) with adequate expertise and knowledge of these Rules, the plant and the work or testing. Each AWP will then be reviewed, agreed, and approved by the authorising engineer (AE) - for the relevant wind farm.

GUIDANCE ON PHILOSOPHY 2.1

In general, work or testing described in manufacturer's service manuals, or equivalent, will be either:

1. Work or testing that requires an AWP to enable it to be carried out safely under the Wind Turbine Safety Rules. Such AWP's will include clear and unambiguous cross-references to the maintenance procedure or work instruction (contained within the manufacturer's service manual), to which it applies – there will normally be no need to duplicate the details contained in the maintenance procedure or work instruction, but the AWP must contain details of all the safety precautions necessary to achieve and maintain safety from the system. The majority of all work or testing at wind farms will fall within this category.
2. Non-intrusive work that can be carried out, without an AWP, by a competent technician following a ROP and by correctly using suitable tools/work equipment and personal protective equipment (PPE). Only a very small proportion of work or testing at wind farms will fall into this category.

The ROP recognises that certain work activities can be undertaken quite safely by someone who is competent, without resorting to the full rigours of an AWP. These work activities are in accordance with the design intent of the WTG manufacturer or supplier and should never involve any intrusive maintenance. Examples of non-intrusive work might include:

- general cleaning of work areas;
- general housekeeping; visual inspections;
- routine start-up/shutting down of WTGs, and
- interrogation of a WTG using a diagnostic tool such as the 'control box' and inspection of portable fire extinguishers.

Taking the example of cleaning; there is a clear distinction to be made between general cleaning, of floors for example, and the cleaning of specific items of plant. For general cleaning of floors, a ROP might be considered appropriate, but for the cleaning of specific items of plant (e.g. cleaning oil from a motor or gearbox), an AWP would be required.

Work or testing deemed to constitute 'non-intrusive tasks' should be considered very carefully by Company 'A' to ensure that activities which very obviously require to be undertaken under an AWP are not included as a ROP. The point of concern here is that work or testing might be carried out under a ROP, when it would be inappropriate to do so.

It should be noted that by far the majority of service manual procedures will require an associated AWP to be produced.

To further explain the phrase 'suitable tools/work equipment are correctly used', everything in the WTG is considered to be work equipment. Therefore, carrying out any work activity on the WTG must by definition be by using work equipment. If a typical routine operation is considered to be a WTG shutdown using the 'control box', then it is considered that this operation has been carried out by using work equipment.

It is perhaps incorrect to use the phrase 'tools and work equipment' because tools in themselves constitute work equipment. However, taking again the example of WTG shutdown, under certain circumstances it is necessary to use a spanner or screwdriver to open a panel door

in order to access the control box. In most technicians' everyday vocabulary a screwdriver or spanner is considered to be a 'tool' and therefore it was considered appropriate to retain both terms.

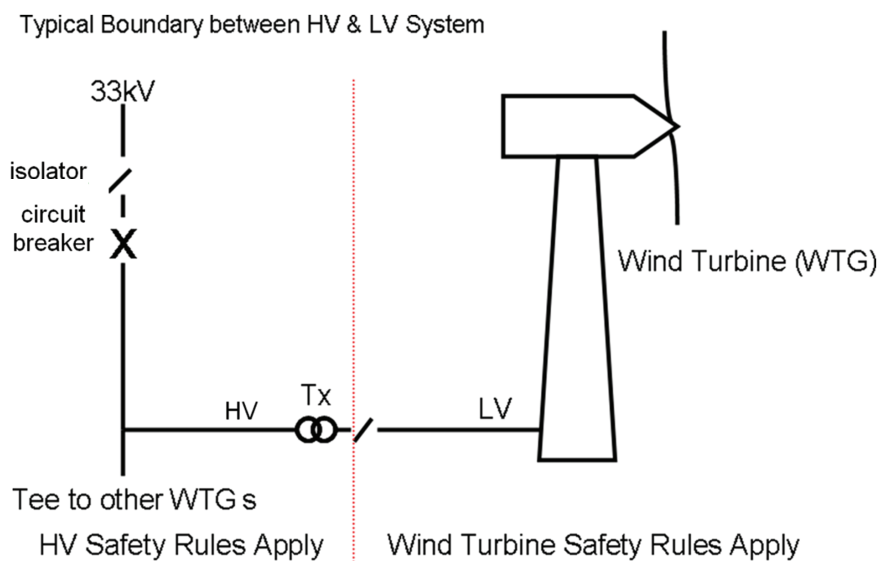
However, Company 'A' shall ensure that remote operations of this nature are subject to an appropriate level of control. It is essential that such remotely initiated 'normal operations' do not impact on any working party who might be physically present at the wind farm by ensuring the correct application of these Wind Turbine Safety Rules, with particular attention to Rule A7.

Recognising that only a very small minority of work or testing will be considered to be of an operational nature, the Wind Turbine Safety Rules have been written to specify the requirements that must be followed when the WTG is taken out of its normal operating condition for the majority of work or testing which will require safety precautions to be taken.

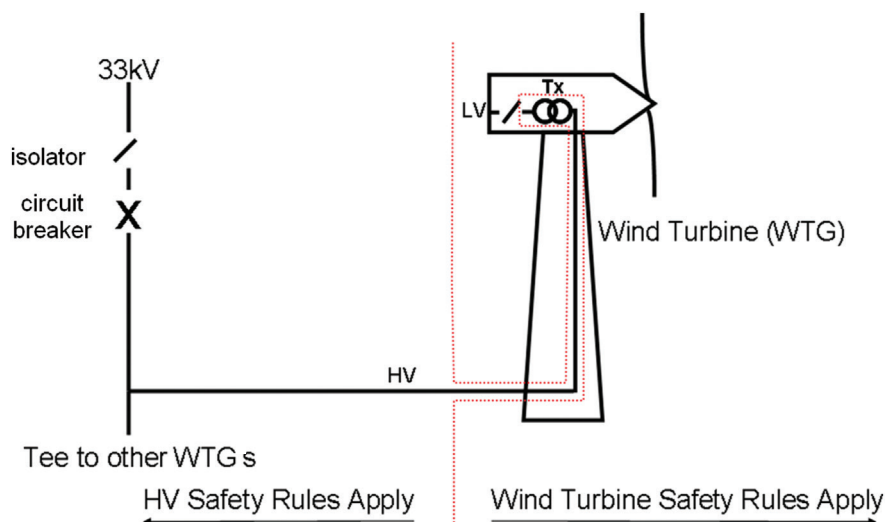
Depending upon the individual design of the WTG, the actual boundary between the HV infrastructure and wind turbine plant and its associated LV infrastructure may lie either inside or outside of the physical structure of that wind turbine. Examples of these two arrangements are indicated diagrammatically as follows. However, the key requirement is that the boundary between the Wind Turbine Safety Rules and any associated HV Safety Rules or other safety rules, must be clearly and unambiguously defined to make it absolutely clear which safety rules apply where.

In defining the boundary points between Wind Turbine Safety Rules and other HV Safety Rules, Company 'A' must ensure that for each item of plant or apparatus only one set of safety rules applies. To clarify this point, it must be absolutely clear which set of rules applies to each item of plant and apparatus at the defined boundary. If it is unclear which set of rules applies, then this is potentially a very dangerous situation.

In addition to the obvious (e.g. main power cables), Company 'A' must also consider the less obvious (e.g.: small power wiring; lighting circuits; control and instrumentation wiring; uninterruptable power supply (UPS) systems, and electrical protection wiring), each of which must have a defined boundary termination point clearly identified.



EXAMPLE OF BOUNDARY WHERE TRANSFORMER IS LOCATED EXTERNAL TO THE WIND TURBINE GENERATOR



EXAMPLE OF BOUNDARY WHERE TRANSFORMER IS LOCATED INTERNAL TO THE WIND TURBINE GENERATOR

It is the responsibility of the wind farm asset owner to ensure that robust HV safety Rules are implemented that achieve a safe system of work.

It is imperative that the boundary between the Wind Turbine Safety Rules and the HV safety Rules is clearly and unambiguously defined.

Where the HV safety rules and Wind Turbine Safety Rules are being implemented by different Companies 'A' then the wind farm asset owner should ensure that all relevant stakeholders are made aware of their respective responsibilities. In these circumstances, it will almost

certainly be a requirement for the asset owner to ensure that each Company 'A' is made aware of each other's safety rules.

The wind farm asset owner should ensure that the 'competence' of persons working under the Wind Turbine Safety Rules can be adequately demonstrated. This could form a part of any 'monitoring' requirements.

The requirements of the Wind Turbine Safety Rules do not address 'lone working'.

The fact that an overall work package can be split down into a number of smaller units is important in the context of AWP. A single AWP might cover the whole of the work, or if the overall work package can be divided into smaller units, then an AWP could be written for each unit. This has particular implications where it would be safe to return the WTG to normal operation between each unit of work (e.g. during servicing work where it might be safe to return the WTG to normal operation overnight or during periods of bad weather).

Company 'A' must decide whether AWP are written to cover overall work packages or whether it is possible to break the overall work package down into smaller units and produce an individual AWP for each one of these. Where the second approach is adopted, the AWP will be cancelled at the end of each job unit, when a decision can be made as to whether to return the WTG to normal operation or start the next unit of work under a new AWP.

The Wind Turbine Safety Rules would allow one person to undertake all of the designated roles. For example, one individual could perform the three key duties of OC, AE and authorised technician (AT).

While this is permitted, it is not always desirable. In the event that one person performs all three roles then there is very little possibility of that individual recognising when a mistake has been made. By dividing the roles and getting more persons involved then there is a significantly greater possibility of someone highlighting errors.

Significant efforts have been made to make the Wind Turbine Safety Rules as simple as possible. However, the Wind Turbine Safety Rules are not meant to be read by anyone who has not received specific training. No individual would be expected to pick up a copy of the rules, read them, understand them and be able to apply them. Every person with a designated role under the Wind Turbine Safety Rules is subject to a formal appointment in writing by an Organisation, (in the case of AE and AT this appointment follows a formal interview, the purpose of which is to check understanding of the Wind Turbine Safety Rules). The requirements for training and appointment are outlined in considerable detail in Wind Turbine Safety Rules support procedure P6 'Procedure for Appointment of Persons'.

In setting out to produce the Wind Turbine Safety Rules there was a deliberate intent to incorporate much of the traditional electricity supply industry safety rules terminology, structure, formality and approach in an attempt to achieve the same standards on wind farms as for conventional generating plant.

Examples of system 'inherent' danger might include: electricity; rotating parts of machinery; pressurised systems such as hydraulic oil and accumulators; hazardous substances such as lubrication fluids.

Examples of 'environmental' danger might include: the means of access to and from the place of work; the standard of housekeeping in the workplace area; the adequacy of lighting in the work area; ensuring that the technician is using the correct tools and work equipment in the proper manner. These environmental dangers are considered as general safety.

Some of the requirements of the five key stages of working under the WTSR can be achieved by Company 'A' and/or wind farm asset owners introducing a formal work control or work management system.

- (i) Making available the plant and LV apparatus concerned for the work or testing required by carrying out transfer control from the OC.
- (ii) Establishment of conditions to safeguard persons from the inherent dangers of the system by applying isolations and other safety precautions listed in the AWP.
- (iii) Execution of the work or testing required in line with service manuals, work instructions etc.
- (iv) Clearance of the plant and LV apparatus on completion or termination of the work or testing to confirm that it is in a safe condition for return to service.
- (v) Restoration of the plant and LV apparatus to its normal operational condition within the system.

Note: Stages (i) to (iv) may be repeated a number of times during any package of work or testing – depending on the complexity of the work or testing.

This is achieved by following AWP's containing detailed instructions for each step and having signature checkpoints at key points in the process.

Company 'A' and/or wind farm asset owners should implement a proactive monitoring regime to ensure that the requirements specified in 2.11 are being met.

Company 'A' should ensure that a robust set of MI are produced in support of the Wind Turbine Safety Rules.

In addition, it is considered good practice to produce MIs to interpret how P1 to P8 will be used and a MI to cover implementation of the Company 'A' Wind Turbine Safety Rules. At the very least this should give a detailed explanation of a Company 'A' requirements for every occasion when the term 'MI' is used in the text of the Rules.

Company 'A' should also give consideration to producing MI for other matters associated with the Wind Turbine Safety Rules, such as excavation and live working on LV apparatus.

Any person(s) writing an AWP must have sufficient levels of skill, competence, experience, expertise etc. to enable them to fully understand the nature of the work or testing, the technical aspects of the WTG, the safety implications, knowledge of the Rules etc. The intention of paragraph 2.12 is simply to clarify that AWP's must be written by a person(s) who is competent to do so, for example an electrical AWP would be written by a person with sufficient electrical expertise and a mechanical AWP by someone with sufficient mechanical expertise; in practice this might be the same person or it could be two different persons. It is also important that the AE has a full grasp of all aspects relating to the work or testing before he/she gives formal approval to the AWP.

3 PRINCIPLES

3.1 To fulfil the requirements of the philosophy, the following principles have been adopted in formulating the Rules:

- (i) The Rules are concerned only with achieving safety for persons.
- (ii) When work or testing is to be carried out on, or adjacent to, high voltage apparatus, HV Safety Rules, or an approved equivalent, shall be used.
- (iii) In the case of LV apparatus, the primary means of achieving safety is, if practicable, by isolation from the system(s). If isolation is not reasonably practicable, safety is achieved by the application of specialised procedures as stated on the AWP.
- (iv) When work or testing is to be carried out on mechanical plant, the primary means of achieving safety is by isolation from the system(s) followed by draining venting, purging and the containment/dissipation of stored energy, as appropriate, except when the work or testing requires the plant to be energised, (for these exceptions the means of achieving safety is by the application of specialised procedures as stated on the AWP).
- (v) The fundamental means of protecting persons at work is the application and maintenance of the primary means of achieving safety specified in 3.1(ii), (iii) and (iv), supported by appropriate actions to maintain the effectiveness of the primary means, e.g. locking off isolating devices.
- (vi) The nomination of persons to carry out defined requirements under the Rules is formal, although part of their normal responsibilities.
- (vii) The application of the Rules shall ensure that a safe situation exists across all control area boundaries and operational interfaces (e.g. across the boundary with the HV system), be they totally or partially within the jurisdiction of Company 'A'.
- (viii) To achieve safety from the system, that is, from dangers which may arise from the design functions of the plant and LV apparatus, each of the five stages referred to in Philosophy, paragraph 2.10, will involve one or more of the following functions:
 - (a) 'Safety Co-ordination' – which includes:
 - Before work or testing commences, a formal release of plant/LV apparatus after ensuring that written procedures are in place instructing the precautions necessary to allow the work or testing to be carried out safely.
 - When work or testing is finished, a formal return of plant/LV apparatus after confirming any limitations or restrictions and cancellation of the written procedure.
 - (b) 'Making Safe/Restoration of Plant and LV Apparatus' – which includes:
 - Before each phase of the work or testing commences, taking actions to make plant and LV apparatus safe for work or testing and confirming such actions in writing.
 - When work or testing is finished, taking actions to ensure that it is safe to return the plant and LV apparatus to an operational condition, recording any limitations or restrictions, removing safety precautions to restore the plant and LV apparatus to service and confirming such actions in writing.
 - (c) 'Work or Testing' – which includes:
 - After confirmation that work or testing can proceed, execution of the required work or testing to its completion or termination.

- 3.2** These three functions cover separate responsibilities, which are distinct from each other and are treated separately in the Rules.
- 3.3** The Rules do not state the number of persons necessary to discharge the three functions. However, where more than one member of a work party is able to carry out the role of AT, then it must be clear to all parties who is performing that role for the duration of each work period.

GUIDANCE ON PRINCIPLES

Primarily, the Wind Turbine Safety Rules are intended to implement a safe system of work for any individuals engaged directly in work or testing on a wind turbine farm. However, in achieving this safe system of work, a positive benefit should be achieved for other persons who are not directly engaged in the work or testing, but who are associated with, or in the vicinity of, the wind farm (e.g. members of the public, landowners, workers on adjacent premises).

The wind farm asset owner should ensure that an approved set of HV safety rules is being implemented.

Company 'A' should be made aware of the HV safety rules and understand who is responsible for their implementation. Equally, those responsible for the application of the HV safety rules should be made aware of the Company 'A' wind turbine safety rules.

In understanding the requirements of 3.1(iii) it must be emphasized that the requirements of the local Legislation and Standards for Working with Electricity must be met in full. In particular, it must be understood that the requirements of Regulations 13 and 14 are 'absolute'.

To understand these requirements, the whole of Wind Turbine Safety Rule A3 must be read in full.

Reference should also be made to 3.1(v) which makes it clear that appropriate actions to maintain the effectiveness of primary means of achieving safety must be taken.

It must be emphasised that, unless it is essential for the completion of work or testing on mechanical plant, the facility for the plant to be energised must not be used. AEs must ensure that they do not allow motive power supplies to be restored during work or testing on plant unless it is considered essential to the completion of that work or testing.

When the AE does allow motive power supplies to be restored, the AWP must state the exact circumstances under which this is permissible and what must be done to maintain safety from the system during periods when the motive power is restored.

If the AE decides that the methods for securing the points of isolation (POIs) are inadequate then an AWP must not be approved or used.

Where the AE considers that the methods of securing POIs are not adequate to meet Wind Turbine Safety Rules or statutory requirements then due consideration should be given by the wind farm asset owner to modification of the installed plant/apparatus.

GUIDANCE ON PRINCIPLES 3.1(vi)

No person should undertake any duties under the Wind Turbine Safety Rules unless they have been formally appointed in writing by an appropriate person from the organisation implementing the WTSR.

In addition, the person being appointed must have accepted the appointment in writing and all appropriate documents should be signed. The person being appointed should retain a copy of the signed documentation.

Further information on the appointment of persons is contained in Wind Turbine Safety Rules Support Procedure P6. Local interpretation of this procedure should be contained in a MI.

GUIDANCE ON PRINCIPLES 3.1(vii)

For guidance on defining boundaries between the Wind Turbine Safety Rules 'system' and any adjoining HV 'system', see under Philosophy paragraph 2.3. For the avoidance of doubt, the boundary between these two 'systems' must be defined in a sufficient level of detail such that it is absolutely clear which rules apply and where.

It must be considered that in some circumstances, in order to achieve a safe system of work, safety precautions might be necessary under both the Wind Turbine Safety Rules and the associated wind farm HV rules at the same time. To cover such situations Company 'A' should produce a MI outlining its procedures for application of safety precautions across the boundary between the Wind Turbine Safety Rules and the approved HV safety rules.

Further information on the cross-boundary working is contained in Wind Turbine Safety Rules Support Procedure P7. Local interpretation of this procedure should be contained in a MI.

GENERAL PROVISIONS

1 GENERAL SAFETY

In addition to the requirements for establishing safety from the system, the safety of persons at work shall also be achieved by establishing and maintaining general safety, at, and in the vicinity of, the place of work.

Before work or testing starts, it is the personal responsibility of the AT or competent technician to ensure that actions are taken to establish general safety at, and in the vicinity of, the workplace.

After work or testing has begun, it is the personal responsibility of all members of the working party to ensure that actions are taken to maintain general safety at, and in the vicinity of, the work area and to stop work or testing if an unsafe situation arises. The working party shall also ensure that conditions of other work areas are not adversely affected by the activities for which they are responsible.

The discharging of responsibility for general safety will be achieved and controlled by ensuring that all activities are in accordance with appropriate instructions and guidance.

GUIDANCE ON WTSR GENERAL PROVISION 1 (GP1)

The AT who prints his/her name and subsequently signs the signature checkpoint of the AWP has taken responsibility for establishing and maintaining general safety.

This also applies to competent technicians using a ROP.

Company 'A' should give due consideration to how the responsibility for general safety is transferred when work or testing under any given AWP is started by one AT, but is subsequently continued by a second AT (e.g. during formal 'transfer' of an AWP). In particular, Company 'A' might wish to implement a system to formally record the handing over of general safety responsibility from one AT to another.

This also applies to competent technicians using a ROP.

Company 'A' should prepare a MI of the standards expected to achieve general safety. The content should include:

- Establishing that a safe means of access and egress is available.
- Ensuring that the place of work is safe for the work or testing to progress.
- Ensuring that the work area is controlled to ensure the working party and others are free from exposure to danger.
- Ensuring that appropriate tools and equipment are available.
- Ensuring that any necessary PPE is available.
- Ensuring that a safe method of work is available.
- Ensuring weather conditions do not add additional risk to the planned work or that weather may present a danger during the planned work. Weather forecasting and checks are recommended prior to work starting.
- Ensuring emergency arrangements are place and are well practised.

Work or testing that extends beyond one working day, even when continued by the same AT, will require that the establishment of general safety is confirmed on each occasion. Once again, Company 'A' might wish to implement a system to formally record the fact that general safety is confirmed prior to the start of each working period.

Company 'A' should consider producing a suitable 'checklist' to aid the AT in following the correct process for establishment of general safety. This could take the form of, for example, a point of work risk assessment completed by the AT or competent technician.

As a reminder to the AT or competent technician, it is recommended that the requirement to 'establish general safety' is highlighted on every AWP and ROP.

Requirements for establishing and maintaining general safety under an AWP or ROP shall be stated within a MI. These requirements shall be established by the organisation using the WTSR.

2 ADDITIONAL SAFETY RULES AND PROCEDURES

In addition to the Wind Turbine Safety Rules, other associated Rules and procedures issued by Company 'A' (e.g. MIs, electrical and mechanical or distribution safety rules), or any other authorities and the requirements of supporting mandatory documents shall be complied with. Guidance documents should be complied with in accordance with MIs.

GUIDANCE ON WTSR GENERAL PROVISION 2 (GP2)

Examples of additional safety rules and procedures might include:

- the approved HV safety rules for the wind farm;
- the distribution network operator safety rules;
- any radiological safety rules;
- the Company 'A' MIs;
- the wind farm asset owner rules and procedures, and
- any other site-specific rules and procedures.

Company 'A' should ensure that in the production of AWP or ROPs under the Wind Turbine Safety Rules, due consideration is given to additional safety rules and procedures that might apply at the wind farm in question. It is absolutely essential that all the requirements are in harmony and that no conflicting requirements are inadvertently introduced, resulting in confusion.

3 SPECIAL INSTRUCTIONS

Work on, or testing of, plant and LV apparatus to which these Rules cannot be applied, or for special reasons should not be applied, shall be carried out in an approved manner which shall be confirmed in writing.

GUIDANCE ON WTSR GENERAL PROVISION 3 (GP3)

This general provision should not be seen as a vehicle for varying the Wind Turbine Safety Rules or a reason for not carrying out the specified requirements under the Rules. However, in those circumstances when it is impossible to apply the Rules, or there may be strong reasons, commercial or technical, for not applying the Rules, then safety from the system can be achieved by carefully planned alternative procedures specified in an approved instruction. Such instructions can be of a 'standing' nature or for use on one occasion only. Standing instructions should be periodically reviewed to ensure their continuing validity.

An example of where the Wind Turbine Safety Rules cannot be applied would be when compliance with Part B, 'Procedures and Keys', cannot be achieved because of the loss of an AWP or associated key(s). In these circumstances, there should be a special instruction, written and approved, to give details on the procedures to be followed which overcomes the problem of having lost the AWP or associated key(s), but having due regard to maintaining safety from the system and safeguarding the AT and other members of the working party.

An example of where the Wind Turbine Safety Rules should not be applied might occur if certain electrical components, operating within the LV apparatus, defined as being a part of the associated Wind Turbine Safety Rules system, were subject to high voltage. In such circumstances, there should be a special instruction, written and approved, to give details on the safe procedures to be followed to ensure that safety from the system is achieved and maintained prior to any work or testing of those HV components.

Further guidance is included in Wind Turbine Safety Rules Procedure P1, which must be implemented by a MI.

4 OBJECTIONS ON SAFETY REASONS

Any person receiving instructions in the application of these Rules shall report to the person issuing those instructions any objections on safety reasons to carrying them out. Any such objections shall then be dealt with in an approved manner, which is described in a MI for that wind farm location.

GUIDANCE ON WTSR GENERAL PROVISION 4 (GP4)

A procedure for dealing with any objections to instructions given in the application of the Wind Turbine Safety Rules is specified in Wind Turbine Safety Rules Procedure P3, which can be approved and implemented as a MI.

The purpose of Wind Turbine Safety Rule GP4 is to safeguard any individual who has cause for concern when given an instruction under the Rules. If any individual feels that instructions issued either directly to them or to other persons are unsafe, then that individual must be given proper recourse to raise such concerns. Any person raising concerns in relation to the Rules must be treated with respect while the matter is reviewed and resolved in a proper manner.

PART A – THE BASIC SAFETY RULES

This section only contains guidance on each rule in Part A of the WTSR and therefore the specific rule must be read in conjunction with the guidance in this section.

GUIDANCE ON Rule A1.1

The Wind Turbine Safety Rules are designed to achieve a safe system of work by achieving safety from the system when they are applied to plant and LV apparatus associated with the business of the wind farm asset owner which has been made subject to these Rules by the Company 'A' MIs.

The fundamental principles of the Rules should be applied to all plant and LV apparatus for which the wind farm asset owner has a maintenance responsibility which falls within the defined Company 'A' Wind Turbine Safety Rules system. This system should be adequately defined in a MI.

The extent of the plant and LV apparatus to which the Rules are applied at each wind farm location should be defined in a MI, the details of which should be made clear to all persons involved with work or testing on that site.

Prior to the commencement of any work or testing, the AE should be provided with sufficient information to allow for an AWP to be produced to an adequate standard. This might require that the AE is directly involved in the planning stages of the work or testing to ensure a thorough understanding in order that an adequate assessment is made of the precautions necessary to achieve safety from the system and system derived hazards. If contractors are to undertake the work or testing, then an associated method statement and risk assessment should be provided which contains all the relevant information.

GUIDANCE ON RULE A1.2

The procedure for the addition of plant and apparatus to the system is specified in Wind Turbine Safety Rules Procedure P4.

GUIDANCE ON RULE A1.3

AWPs should be reviewed at regular intervals, to be determined by Company 'A'. In addition, if there is any reason to believe that an AWP is no longer valid then it should be immediately withdrawn and reviewed.

Company 'A' should clearly state its requirements for the review and update of AWP's in a MI.

GUIDANCE ON RULE A1.4

The Wind Turbine Safety Rules are only applicable to plant and LV apparatus. All work or testing on or involving HV apparatus and its associated systems must be carried out using HV Safety Rules that have been approved by the wind farm asset owner.

GUIDANCE ON RULE A1.5

As the WTSR apply to the plant and LV apparatus of the wind turbine it is essential that up to date drawings and records for the plant and LV apparatus are available and kept up to date.

GUIDANCE ON RULE A1.6

This rule has been added to the 4th Edition to ensure up to date drawings and records / plans of electrical installations are available for reference

GUIDANCE ON RULE A2.1

Wind Turbine Safety Rule A2.1 is stating in the strongest possible terms that work or testing on, or adjacent to, plant must be subject to the terms of an AWP.

ROPs must not be used for work or testing on plant unless the AE considers it to be routine and only include non-intrusive work. In making this judgement, the AE should take into account the guidance and instructions issued by the WTG manufacturer or supplier.

As a simple rule of thumb, whenever safety precautions are required, such as isolation, locking and/or the display of a caution notice, then an AWP will be required for work or testing on plant.

In practical terms, the majority of work or testing on plant will require an AWP. Only a very small proportion of work or testing should ever be judged as routine and non-intrusive. and carried out under the terms of a ROP. Company 'A' must ensure that proper consideration is given to all work or testing on plant to ensure that an AWP is always produced when circumstances dictate.

GUIDANCE ON RULE A2.2

When the AE decides that safety from the system can be achieved by limiting the work or the work area then those limits must be clearly stated on an AWP. Examples of where limits to the work or work area, might be sufficient to achieve safety from the system might include activities such as painting or cleaning specified items of plant.

Taking the example of cleaning, there is a clear distinction to be made between general cleaning, of floors for example, and the cleaning of specific items of plant. For general cleaning of floors a ROP might be considered appropriate, but for the cleaning of specific items of plant (e.g. cleaning oil from a motor or gearbox), an AWP would be required.

GUIDANCE ON RULE A2.3(i)

The requirement of Rule A2.3(i) is twofold. Firstly, the AWP, and any supporting documents, should state the exact items of plant on which work or testing can take place, in clear and unambiguous terms. Secondly, the plant itself should be identified in such a manner that the AT is left in no doubt about the item on which he/she is allowed to work or test.

GUIDANCE ON RULE A2.3(ii)

The term 'immobilised' and locked refers to the security of the isolation. If the AE decides that the methods for securing the POI are inadequate then an AWP must not be produced.

Where the AE considers that the methods of securing POI are not adequate to meet Wind Turbine Safety Rules or statutory requirements, due consideration should be given by the wind farm asset owner to modification of the installed plant/apparatus.

Safety keys used to lock POI which may be removed during the course of the work or testing should be retained in the personal possession of the AT holding the AWP. During any periods of ROMP, when this is essential to completion of the work or testing, the AT must, at all times, maintain safety from the system by alternative methods which must be clearly stated on the AWP, for example by withdrawing persons to a safe area and/or the provision of physical barriers.

GUIDANCE ON RULE A2.3(iii)

When breaking into plant for intrusive maintenance, the contents could represent a hazard to persons. The intent of paragraph A2.3(iii) is to draw attention to the fact that the contents must be reduced to a suitable level in order to avoid danger. It is not always necessary to empty the contents completely in order to make a system safe for work or testing, which is why the paragraph states 'adjusted to a level which avoids danger'.

This reducing of the level is normally referred to as 'draining' and takes place via drain valves. In some circumstances, the drain pipework systems are linked together forming a common drain; in other cases, the drains are not interconnected. In circumstances where drain valves form part of a common interlinked drain system they must first be opened to reduce the contents to an acceptable level and then shut and locked in the closed position to prevent ingress of the working fluid back into the isolated plant via the drain line. In circumstances where drains are not interconnected they can be left open to atmosphere and it is common practice to lock them in the open position.

The requirement to adjust the contents of plant to a level which avoids danger and any requirement to lock a drain valve open or closed should be assessed by the AE and clearly stated on the AWP. It is for the AE to determine exactly what needs to be done, based on the local circumstances, in order to meet the requirements stated in the Wind Turbine Safety Rules.

GUIDANCE ON RULE A2.3(iv)

When plant and/or apparatus is to be vented as part of achieving safety from the system before the work or testing commences, the venting shall be carried out in a controlled manner to ensure that:

There is no danger to persons from any emissions being vented. The venting process is completed and atmospheric pressure is established internally within the plant/apparatus being vented.

Precautions have been taken to maintain the established safe conditions during the work or testing.

The exact requirements for venting should be assessed by the AE and clearly stated on the AWP. It is for the AE to determine exactly what needs to be done, based on the local circumstances, in order to meet the requirements stated in the Wind Turbine Safety Rules.

GUIDANCE ON RULE A2.3(v)

In deciding if the residue of contents could cause danger, an AE, prior to the preparation/ approval of an AWP, may need to consult a selected person. The AWP must specify any requirement for the AT to obtain a selected person's report immediately before the work or testing being carried out. The requirements stated in the selected person's report must then be implemented by the AT before the prescribed work or testing specified on the AWP can take place. The exact requirements for implementing safety precautions specified in a selected person's report should be outlined in a MI.

If the work or testing is likely to disturb or otherwise affect any residue to create danger, then such danger must be dealt with by the safety precautions specified on the AWP (note: account might need to be taken of Wind Turbine Safety Rule A9 – Confined Spaces; this shall be in accordance with a MI).

When plant and/or apparatus is to be purged, the purging shall be carried out in a controlled manner to ensure that:

There is no danger to persons from any emission during the purging process.

The purging process is completed and normal atmospheric conditions exist internally within the plant/apparatus being purged.

Precautions have been taken to maintain the established safe conditions during the work or testing.

GUIDANCE ON RULE A2.3(vi)

Some examples of circumstances where stored energy has to be dealt with in the actions specified under an AWP to achieve safety from the system for work or testing on plant are:

- the release of spring tension/compression, and
- the release of pressure associated with hydraulic accumulators.

All necessary actions specified on the AWP to dissipate stored energy must be completed prior to the start of work or testing. In certain circumstances, the specified actions might form an integral part of that work or testing, in which case the sequence of events necessary to safely dissipate the stored energy must be clearly stated on the AWP.

Although Wind Turbine Safety Rule A2.3(vi) is written specifically for plant applications, the same requirements must be met for work or testing on LV apparatus when some examples of stored energy include:

- the discharge of electrical capacitors, and
- electrical batteries.

GUIDANCE ON RULE A2.4

'Motive power' should be considered to be any source of energy used to produce motion.

The function to allow restoration of motive power (ROMP) is intended to cater only for those situations when it is absolutely essential that such power supplies (plant and LV apparatus) are made available in order to facilitate completion of the work or testing where motive power is required.

Examples of legitimate ROMP include gaining access to the blade hub bolts, internal inspection of gearbox gear teeth, alignment of generators and high-speed couplings, the requirement to rotate the hub in order to complete blade inspections and blade repairs on multiple blades on the same turbine, LV functional testing.

AWPs with ROMP require a high standard of preparation and presentation.

Where an ROMP is essential to the completion of the task, the AWP must state the reasons for ROMP and give exact details of how the AT will be required to maintain safety from the system at all times by the use of alternative methods, for example, the installation of a temporary and transparent guard for internal gearbox inspections, using a barrier to identify the limit of proximity to the work area, or withdrawing persons to a safe area. This will enable the AT to discharge his or her responsibilities. The method of dealing with hazards arising during periods of ROMP shall be stated on the AWP.

These AWP's must state the way in which the persons concerned with the work or testing will be safeguarded from danger during the period that motive power supplies are restored.

Safety keys used to lock POI which may be removed during the course of the work or testing should be retained in the personal possession of the AT holding the AWP.

In order to demonstrate which motive power supplies have been de-isolated, prior to ROMP it is strongly recommended that the AT initials against a signature checkpoint on the AWP.

When motive power supplies have been re-isolated, following any period of restoration (and prior to the recommencement of work or testing), it is strongly recommended that the AT be required to confirm or initial against a signature checkpoint on the AWP to confirm that the plant/LV apparatus is once again isolated and has therefore been returned to a safe condition.

Additional guidance for AEs with respect to activities for which ROMP may typically be required should be outlined in a MI. Activities for which ROMP is not considered appropriate should also be highlighted.

It is not intended that an AWP with ROMP supplies should routinely be used for proving tests on plant and LV apparatus following maintenance when all work or testing has been completed. Such tests would more usually be classed as 'normal operation' and carried out in accordance with a ROP after cancellation of the AWP.

To be clear, a ROMP should not be used to control work that requires live work or testing. The guidance in rule A3.9 should be followed for this purpose.

GUIDANCE ON RULE A2.5

The AWP should clearly specify the work or testing that is allowed. The AT must limit the work or testing to that which is specified on the AWP.

Any additional work or testing that might be identified, (during the course of the work or testing specified on the AWP), shall be referred to an AE who shall ensure that a further AWP is produced and approved to take account of that additional work/testing. See Wind Turbine Safety Rule B2.2.7.

Under such circumstances, all work or testing under the original AWP must stop until a new AWP is issued. The original AWP cannot be cancelled until a new AWP is issued to cover both the original and the additional work or testing. Once the safety precautions specified on the new AWP are put in place, and the signature checkpoint has been completed by the AT, the original AWP can be cancelled. In these situations, the circumstances surrounding the issue of a second AWP should be recorded in the clearance section of the original AWP.

A3 SAFETY PRECAUTIONS FOR WORK OR TESTING ON OR ADJACENT TO LOW VOLTAGE APPARATUS

GUIDANCE ON RULE A3.1

This danger might be of particular significance when an AWP is written which allows for the removal of POI during the course of work or testing. It is very easy to become so focused on the job in hand that a technician believes he is working on isolated LV apparatus when in fact he/she has removed the isolation.

The requirements to contain or dissipate stored energy in a safe manner must be clearly stated on the AWP for work or testing on LV apparatus. Some examples of stored energy include:

- the discharge of electrical capacitors, and
- electrical batteries.

GUIDANCE ON RULE A3.2

It should be noted that the requirements of Rule A3.2 are mandatory. In order to meet the requirements of Rule A3.2 it is considered that safety from the system will only be obtained if full compliance with local legislation and standards relating to working with electricity is achieved.

In addition to the more obvious requirements to achieve safety from the system, such as the isolation of any electrical supply, the precautions must also include other sources of danger that might be less obvious, such as containing or dissipating any form of 'stored energy' associated with the electrical system. Some examples of 'stored energy' associated with electrical systems will include capacitors, UPS installations and spring-loaded switchgear operating mechanisms.

GUIDANCE ON RULE A3.3

The requirements to isolate LV apparatus must be considered in the terms of 'shall where practicable'. Essentially, this means that if it is possible to achieve an isolation in the light of current knowledge and invention, then it must be done. If the AE decides that the means of isolation are inadequate, then an AWP must not be produced.

Where it is not practicable to isolate, and where danger may arise, work or testing on or near live LV apparatus is only allowed provided all of the requirements stated in Rule A3.7 have been met.

The term 'immobilised' and locked, refers to the security of the isolation. If the AE decides that the methods for securing the POI are inadequate, then an AWP must not be produced.

Even in circumstances where the requirements of Rule A3.7 have been satisfied, the requirement to immobilise and lock isolating devices is still strong, but by the use of the words 'where reasonably practicable' some allowance is made for balancing the time, trouble and cost against the risk involved.

Where the AE considers that either the means of achieving an isolation or the methods of securing POI are not adequate to meet Wind Turbine Safety Rules or statutory requirements, then due consideration should be given by the wind farm asset owner to modification of the installed plant/apparatus.

GUIDANCE ON RULE A3.4

The requirement to display a caution notice at all POI is mandatory. If the AE decides that it is not possible to apply a caution notice to POI, then an AWP must not be produced.

Where the AE considers that it is not possible to apply a caution notice to POI, then due consideration should be given by the wind farm asset owner, to modification of the installed plant/apparatus.

GUIDANCE ON RULE A3.5

Wind Turbine Safety Rule A3.5 states, in the strongest possible terms, that work or testing on, or adjacent to, LV apparatus must be subject to the terms of an AWP.

ROPs must not be used for work or testing on LV apparatus unless the AE considers it to be routine work and non-intrusive. In making this judgement, the AE should take into account the guidance and instructions issued by the WTG manufacturer or supplier.

As a simple rule of thumb, whenever safety precautions are required, such as isolation, locking and/or the display of a caution notice, then an AWP will be required for work or testing on LV apparatus.

In practical terms, the majority of work or testing on LV apparatus will require an AWP. Only a very small proportion of work or testing should ever be judged as non-intrusive and carried out under the terms of a ROP. Company 'A' must ensure that proper consideration is given to all work or testing on LV apparatus to ensure that an AWP is always produced when circumstances dictate.

GUIDANCE ON RULE A3.6

The requirement of the first part of A3.6 is twofold. Firstly, the AWP, and any supporting documents, should state the exact items of LV apparatus on which work or testing can take place in clear and unambiguous terms. Secondly, the LV apparatus itself should be identified in such a manner that the AT is left in no doubt about the item on which he/she is allowed to work or test. See also Guidance on RULE A6.

In addition, the AWP should clearly specify the work or testing that is allowed. The AT must limit the work or testing to that which is specified on the AWP.

Any additional work or testing that might be identified (during the course of the work or testing specified on the AWP), shall be referred to an AE, who shall ensure that a further AWP is produced and approved to take account of that additional work/testing. See Wind Turbine Safety Rule B2.2.7.

Under such circumstances, all work or testing under the original AWP must stop until a new AWP is issued. The original AWP cannot be cancelled until a new AWP is issued to cover both the original and the additional work or testing. Once the safety precautions specified on the new AWP are put in place, and the signature checkpoint has been completed by the AE, then the original AWP can be cancelled. In these situations, the circumstances surrounding the issue of a second AWP should be recorded in the clearance section of the original AWP.

GUIDANCE ON RULE A3.7

Wind Turbine Safety Rule A3.7 sends a very strong message that the preferred method is always to work or test with the LV apparatus isolated. Therefore, the AE must have a very strong justification to produce an AWP that allows any element of live work or testing. However, it is recognised that in some exceptional circumstances some element of live work or testing can be justified. When this is the case, it is essential that the AWP clearly states the precautions that will keep persons safe during such live work or testing.

The factors which would be considered in deciding whether it was justifiable for work or testing to proceed with the conductors live would include the following:

- (i) When it is not practicable to carry out the work with the conductors dead, e.g. where for the purposes of testing or fault-finding it is essential for the conductors to be live.
- (ii) The creation of other hazards, by making the conductor dead, such as to other users of the system.
- (iii) The need to comply with other statutory requirements.
- (iv) The level of risk involved in working live and the effectiveness of the precautions available set against economic need to perform that work.

GUIDANCE ON RULE A3.8

There could be circumstances where the only possible way of determining the exact nature of a fault on LV apparatus involves some element of live testing. In deciding whether live testing is justified, account should be taken of whether any 'specialist' electrical test equipment is available in the market-place that would enable the fault to be located with the LV apparatus isolated. When live testing is found to be justifiable by applying the criteria laid down in Rule A3.7 and the fault is positively identified, then all subsequent repair work should be carried out with the LV apparatus isolated unless live working can be justified under the same criteria. In general, justification for carrying out live repair work would be extremely rare.

When electrical supplies are to be restored, the safety precautions specified in the AWP, shall ensure that safety from the system is maintained prior to and after removing the isolation that allows this restoration to take place. Those actions shall include the requirement to notify all personnel in the vicinity prior to restoring motive power supplies

To be absolutely clear: live testing is not justified simply because the correct test equipment is not available or because it might take more time to find a fault by testing on LV apparatus that has been isolated.

GUIDANCE ON RULE A3.9

In deciding the 'safety precautions', reference should be made to Wind Turbine Safety Rules A3.12 and A3.13.

It is essential that the AWP must state clearly the detail of the work or testing and also detail when that work is in a live or unisolated condition.

It must also state clearly all of the necessary precautions to be taken during the course of work or testing, in particular when the LV apparatus is not isolated or when live work/testing (if this is can be justified under Rule A3.7).

The AWP should state which POIs of are to be used.

Where POI are to be removed for the purpose of live testing/work, the exact point of isolation should be detailed on the AWP.

The AWP should state additional precautions for live work/testing that could include:

- Accompaniment by another AT, demarcation of the work area, erecting barriers around components that are to become live, the use of insulated tools, the use of insulated mats, the use of insulated PPE and the removal of metallic jewellery/glasses.

To be clear: where a point of isolation is removed for the purpose of live testing/live work, this does NOT constitute a ROMP and the ROMP facility within the AWP format should NOT be used.

GUIDANCE ON RULE A3.10

In certain circumstances, work or testing on LV apparatus, that is part of the Wind Turbine Safety Rules defined 'system', would require safety precautions to be taken on associated HV apparatus. In such circumstances, it would be usual for both an AWP and an associated safety document under the HV safety rules to be issued for the work or testing. One example of where this might be the case could be for work on cooling fans associated with HV transformers; the cooling fans might be designated as part of the Wind Turbine Safety Rules 'system', while the associated HV transformer would be designated a part of the HV Safety Rules 'system'.

Where these circumstances exist, the AWP must clearly state that a safety document under the approved HV safety rules is required. The AT must sign a signature checkpoint to confirm that an HV safety rules safety document has been obtained. It would be considered good practice for the AT to record any details of the HV safety rules safety document on the AWP (e.g. record any unique identification number of the HV safety rules safety document).

GUIDANCE ON RULE A3.11

The suitability of such test equipment should be considered within the context of Wind Turbine Safety Rules Procedure P2 and test equipment for use on LV apparatus must be formally 'approved'.

Company 'A' should refer to further guidance or standards as appropriate before making any formal approvals under Wind Turbine Safety Rules Support Procedure P2.

GUIDANCE ON RULE A3.12(i)

All means of LV isolation should be 'positive' and should provide adequate physical separation or sufficient gap. Examples would include: circuit breakers; isolators; fuses and links.

GUIDANCE ON RULE A3.12(ii)

The term 'immobilised and locked' refers to the security of the isolation. If the AE decides that the methods for securing the POI are inadequate then, an AWP must not be produced.

Where the AE considers that the methods of securing POI are not adequate to meet Wind Turbine Safety Rules or statutory requirements, due consideration should be given by the wind farm asset owner to modification of the installed plant/apparatus.

Where fuses and/or links are removed to form the isolation, Company 'A' should give consideration to how these POI can be physically locked (e.g. proprietary locking devices are readily available to fit most fuse holders).

In any event, the fuses and/or links should be physically taken away from the point at which the isolation was carried out and either retained in the personal possession of the AT or alternatively locked away in a suitable cabinet and the key retained by the AT.

The requirements for achieving and maintaining the security of LV isolating devices should be specified in MIs.

On a final point, it is considered good practice to identify and label all fuses and/or links to ensure that they are correctly replaced in the same fuse holders from which they were removed.

GUIDANCE ON RULE A3.12(iii)

It should be noted that some portable or hand-held LV apparatus might be excluded from the Wind Turbine Safety Rules 'system'. All such exclusions must be adequately defined in a MI which should clearly define the safe system of work to be adopted. The safe system of work for portable LV apparatus excluded from the Wind Turbine Safety Rules 'system' must achieve the same standards as those imposed by the Rules themselves.

Where the portable or hand-held LV apparatus is included in the Wind Turbine Safety Rules 'system', then an AWP must be issued to state the required safety precautions to achieve safety from the system.

GUIDANCE ON RULE A3.12(iv)

All sensible precautions should be taken to reduce the risk of safety keys and removable isolating devices being lost (e.g. keys placed in the top pockets of overalls can easily fall out).

The safety keys or removable isolating devices must be kept at the workplace by the AT such that they are under their control throughout the work or testing.

GUIDANCE ON RULE A3.12(v)

A MI must be produced outlining how items are retained in safe custody during periods when work or testing is not actually in progress. For example, Company 'A' might specify that the items are to be locked in a drawer or cabinet, the key to which is retained by the AT.

GUIDANCE ON RULE A3.12(vi)

Isolating devices and safety keys must be identified with the LV apparatus with which they are associated. The details of how this is to be achieved should be specified in a MI.

GUIDANCE ON RULE A3.12(vii)

The exact requirements for the surrender of the AWP from one AT to another, under the requirements of Wind Turbine Safety Rule B2.3, should be specified by Company 'A' in a MI.

GUIDANCE ON RULE A3.12(viii)

The term 'exposed live LV apparatus' includes all exposed bare metal which is live at LV, (this would include exposed live LV conductors and terminals).

Serious accidents have occurred during work or testing on LV apparatus when the wrong cover has been mistakenly removed, particularly at the rear of the switchgear, resulting in unexpected access to live conductors. During such work or testing the AWP should specify a requirement for danger notices to be displayed on adjacent live panels at the limits of the work area.

Any AT carrying out work or testing adjacent to exposed live LV apparatus must be competent to undertake such tasks. It is incumbent on Company 'A' to clearly specify, in a MI, what training and competency assessment requirements need to be met by any AT before carrying out work or testing adjacent to exposed live LV apparatus. No AT should undertake work or testing adjacent to any exposed live LV apparatus unless they have been designated in writing specifically to carry out these tasks.

The requirement for this work or testing to be carried out only by a specifically appointed AT should be indicated on the AWP.

Any AE producing an AWP for work or testing adjacent to any exposed live LV apparatus must have sufficient competence such that they:

- can understand the risks;
- can adequately make the justification;
- can understand and apply the statutory requirements, and
- can specify adequate precautions in order to maintain safety from the system.

It is acknowledged that in some circumstances it will be acceptable, due to the specialist nature of some activities, for a person to undertake work or testing of the type described in Rule A3.12(viii) under the personal supervision of an AT that meets the requirements described here.

The term 'render assistance' would include such things as: knowing how to disconnect the power supply; being capable of providing first aid; knowing how to raise the alarm, summon help and who to contact in an emergency.

GUIDANCE ON RULE A3.12(ix)

'Proving dead' can be defined as live working until confirmation has been obtained through testing that the LV apparatus is not live. Therefore, the requirements of A3.13 apply. The suitability of test equipment should be considered within the context of Wind Turbine Safety Rules Procedure P2. See also the guidance under Rule A3.11.

The requirement to test the instrument itself should only be by the use of a specialist 'proving unit'. Test instruments should never be tested at 'system' voltage.

GUIDANCE ON RULE A3.12(x)

When an AT has left the work or testing to attend to other matters they must test for dead before resuming work. Obviously, a measure of common sense must be applied to this requirement, but it is clear that resumption of work or testing following a lunch break or the resumption of work or testing following an overnight break would definitely require that the LV apparatus must be tested to prove that it is not live.

GUIDANCE ON RULE A3.13

It is absolutely essential that if work or testing on live LV apparatus can be justified then the AT should be in no doubt that this is the case. The AWP must state in some detail what is allowed and what is not allowed.

Any AE producing an AWP for work or testing on live LV apparatus must have sufficient competence such that they:

- can understand the risks;
 - can adequately make the justification;
 - can understand and apply the statutory requirements, and
 - can specify adequate precautions in order to maintain safety from the system.
-

Any AT carrying out work or testing on live LV apparatus must be competent to undertake such tasks. It is incumbent on Company 'A' to specify clearly, in a MI, what training and competency assessment requirements need to be met by any AT before carrying out work or testing on live LV apparatus. No AT should undertake work or testing on live LV apparatus unless they have been designated in writing specifically to carry out these tasks.

The requirement for this work or testing to be carried out only by a specifically appointed AT should be indicated on the AWP.

It is acknowledged that in some circumstances it will be acceptable, due to the specialist nature of some activities, for a person to undertake work or testing of the type described in Rule A3.13 under the personal supervision of an AT that meets the requirements described here.

The requirement to remove watches, rings, wristlets, cufflinks, pendants and jewellery etc. is mandatory, and for absolute clarity should be stated on the AWP as part of required safety precautions.

There is a requirement to ensure that the AT carrying out work or testing on live LV apparatus is not exposed to additional hazards from accidental contact with adjacent earthed metal (e.g. casings, cabinets, terminal boxes), or other conductors at a different electrical potential (e.g. three-phase conductors, busbars or terminals). The requirements to apply suitable insulation and/or screening to reduce the risk of accidental contact with hazardous conductors or earth must be clearly stated on the AWP (e.g. it would be preferable to apply any such insulation or screening with the LV apparatus fully isolated). Where PPE is required to be used as a safety precaution, it must be a last resort and due account should be taken of fault levels of the circuit concerned.

The suitability of test equipment and test probes should be considered within the context of Wind Turbine Safety Rules Procedure P2 and be formally approved.

The term 'render assistance' would include such items as: knowing how to disconnect the power supply; being capable of providing first aid; knowing how to raise the alarm, summon help and who to contact in an emergency.

The requirements for avoiding danger from flammable atmospheres during work or testing on live LV apparatus in any underground situation must be clearly stated on the AWP. While it might appear improbable that a flammable atmosphere could exist on a wind farm, these requirements must be given due consideration. Some examples of flammable atmosphere could arise from: naturally occurring phenomena (e.g. methane); adjacent premises (e.g. natural gas), and/other work process (e.g. LPG cylinders).

A4 OPERATION OF PLANT AND LOW VOLTAGE APPARATUS

GUIDANCE ON RULE A4

The AT responsible for work or testing under an AWP must be satisfied that correct procedures have been followed to achieve safety from the system. By far the best method is for the AT to personally carry out the specified requirements or give personal supervision. Where this is not practicable and a second AT is instructed to apply safety precautions, then consideration should be given to that individual countersigning the AWP to confirm that the stated precautions have been correctly applied. In any case, using signals, or agreed time intervals before applying or removing isolations shall never be used.

It should be noted that for work or testing under an AWP it will, in almost every case, be necessary to undertake some preliminary operational work or testing under the terms of a ROP. One clear example of this is where the WTG needs to be selected to 'local control' and 'shut down' immediately prior to the work or testing under the AWP. In such cases, it will not be necessary to apply the requirements of Wind Turbine Safety Rule C4.2 and where appropriate, any safety precautions that would otherwise have been stated on the ROP should instead be included on the AWP.

A5 DEMARCATION OF WORK AREAS

GUIDANCE ON RULE A5

In general, the AE should consider the desirability of including the requirement to post danger notices on operational plant and LV apparatus adjacent to the work area in the AWP.

Serious accidents have occurred during work or testing on LV apparatus when the wrong cover has been mistakenly removed, particularly at the rear of the switchgear, resulting in unexpected access to live conductors. During such work or testing, the AWP should specify a requirement for danger notices to be displayed on adjacent live panels at the limits of the work area.

Physical barriers might be required to prevent access to items of plant or LV apparatus during periods when motive power is restored. The AWP must specify how persons are to be kept safe during periods when motive power is restored, particularly if operations are undertaken with guards or covers removed.

A6 IDENTIFICATION OF PLANT AND LOW VOLTAGE APPARATUS

GUIDANCE ON RULE A6

Company 'A' must ensure that suitable labels are attached to the WTG, such that there can be no confusion as to the exact item of plant or apparatus on which the work or testing is going to take place.

It is also of paramount importance that all POI are correctly labelled and identified, such that the AT is left in no doubt about the requirements to achieve safety from the system stated on the AWP.

The terminology and wording used on AWP, and any supporting documents, must exactly match that on any identification labels.

It is important to remember that if the AT removes any identification label during the course of work or testing, then it should be replaced before the AWP is cleared. If this is not the case, then the details should be recorded in the clearance section of the AWP as an 'exception'.

A7 AUTOMATICALLY OR REMOTELY CONTROLLED PLANT AND LOW VOLTAGE APPARATUS

GUIDANCE ON RULE A7.1

WTGs can often be operated by persons located either on the wind farm but remote from the point of work or testing, or remote from the wind farm location itself (e.g. using laptop computers with appropriate 'dial up' facilities). In either case, there is a potential for the persons operating the plant/LV apparatus to be unaware of any work or testing that is taking place.

GUIDANCE ON RULE A7.2

During work or testing, persons shall be safeguarded from danger that might arise if a WTG was subject to any operation that could be initiated either automatically, (as part of the normal design function of the WTG), or by manual intervention from a remote point and which is outside the direct control of the AT in charge of the working party. The AWP must state all necessary precautions to isolate the WTG to prevent any automatic or remote operation.

One particular example of circumstances when the working party might be exposed to danger from automatic or remote operation, unless adequate safety precautions are taken, is during any periods when motive power supplies are restored. See Rule A7.5.

GUIDANCE ON RULE A7.3

The means of preventing any remote operation of the wind turbine during work or testing shall be stated on the AWP. Wherever possible, the means to prevent remote operation should be a unique 'key operated' switch; once operated, the key should be retained at all times by the AT who is the recipient of the AWP.

The use of the WTG 'control box' to select the means of preventing remote operation is considered to be undesirable and, unless no alternative could be implemented in light of current knowledge and invention, would be in contravention of Rule A7.3.

If the AE decides that the methods for preventing automatic or remote operation are inadequate, then an AWP must not be produced.

Where the AE considers that the methods of preventing automatic or remote operation are not adequate to meet Wind Turbine Safety Rules or statutory requirements then due consideration should be given by the wind farm asset owner to modification of the installed plant/apparatus.

GUIDANCE ON RULE A7.4

The AWP must specify how safety from the system will be achieved from all automatic or remote control features of the WTG.

GUIDANCE ON RULE A7.5

The AWP must specify how safety from the system is to be maintained during any periods when ROMP is allowed to facilitate work on plant.

GUIDANCE ON RULE A7.6

Any AT carrying out work or testing on, or the making of adjustments to, the controlling features of WTG plant or apparatus must be competent to undertake such tasks. It is incumbent on Company 'A' to specify clearly, in a MI, what training and competency assessment requirements need to be met by any AT before carrying out work or testing on, or making of adjustments to, the controlling features of WTG plant or apparatus. No AT should undertake work or testing on, or the making of adjustments to, the controlling features of WTG plant or apparatus unless they have been designated in writing by Company 'A' specifically to carry out these tasks.

The requirement for this work or testing to be carried out only by a specifically appointed AT should be indicated on the AWP.

The consultation between the AT and the OC is required to ensure that the latter does not think that the WTG has been returned to an operational state. There should be agreement about what to do in the event that any alarms are received, or other abnormal events occur, during such work or testing.

It is acknowledged that in some circumstances it will be acceptable, due to the specialist nature of some activities, for a person to undertake work or testing of the type described in Rule A7.6 under the personal supervision of an AT that meets the requirements described above.

IT IS ABSOLUTELY ESSENTIAL THAT NO OTHER UNAUTHORISED THIRD PARTY CAN EXERT INFLUENCE OVER THE WTG DURING WORK OR TESTING ON, OR THE MAKING OF ADJUSTMENTS TO, THE CONTROLLING FEATURES OF WTG PLANT OR APPARATUS.

GUIDANCE ON RULE A7.7

In the circumstances described in Rule A7.7, the AWP should take account of the position that any controlling features might be left in place on the completion of the work or testing that would cause the WTG to become operational immediately when de-isolated. The AWP should specify the safe condition of controlling features that must be achieved prior to the de-isolation of associated plant and LV apparatus to prevent danger to persons.

A8 EXCAVATION

GUIDANCE ON RULE A8.1

It is incumbent on Company 'A' to ensure that any HV Safety Rules that are approved under Rule A1.4 include a suitable procedure for excavation, particularly in the context of underground cables and other services.

Any statutory requirements relating to excavation must be met.

Reference should also be made to Wind Energy Industry Guidelines for Health and Safety.

A9 CONFINED SPACES

GUIDANCE ON RULE A9.1

Company 'A' should produce a MI specifying its detailed procedures for confined space working. It is suggested that areas of the wind farm and/or WTGs containing plant and LV apparatus, designated as part of the Wind Turbine Safety Rules 'system', which are deemed to be confined spaces are highlighted in this MI.

The statutory requirements relating to confined spaces must be met.

Reference should also be made to Wind Energy Industry Guidelines for Health and Safety.

GUIDANCE ON RULE A9.2

Under normal circumstances, access into a given area might not give rise to any reasonably foreseeable 'specified risk'. However, the nature of work or testing itself might give rise to a reasonably foreseeable 'specified risk', for example if 'hot work' was required or the use of hazardous substances was necessary.

GUIDANCE ON RULE A9.3

The AWP should specify all necessary precautions that must be taken either prior to or during any work or testing in a confined space.

In all such cases, it is strongly recommended that the AWP specifies a requirement to obtain a selected person's report. Any additional safety precautions highlighted by the selected person must be implemented by the AT in accordance with procedures outlined in a MI, (see Rule B2.1.2).

PART B – PROCEDURES AND KEYS

This section only contains guidance on each rule in Part B of the WTSR and therefore the specific rule must be read in conjunction with the guidance in this section.

B1 GENERAL

GUIDANCE ON RULE B1.1

AEs and ATs must have a thorough understanding of the processes in dealing with AWP's and keys. This understanding should be confirmed by Company 'A' as part of the formal appointment process, (authorisation), required under Wind Turbine Safety Rule Support Procedure P6.

GUIDANCE ON RULE B1.2

Company 'A' must produce suitable MIs outlining the exact requirements as to how compliance with Part B of the Wind Turbine Safety Rules is to be achieved.

In addition, it is considered good practice to produce MIs to cover 'Implementation of the Company 'A' Wind Turbine Safety Rules', the purpose being to highlight how Company 'A' wishes its Wind Turbine Safety Rules to be implemented. At the very least this should give a detailed explanation of the Company 'A' requirements for every occasion when the term MI is used in the text of the Rules. Any MI produced to cover 'Implementation of the Company 'A' Wind Turbine Safety Rules' could be used to specify the requirements for compliance with part B.

GUIDANCE ON RULE B1.3

It is important that ATs fully understand the process of surrendering an AWP to another AT or into safe custody. This understanding should be confirmed by Company 'A' as part of the formal appointment process, (authorisation), required under Wind Turbine Safety Rule Support Procedure P6.

B2 APPROVED WRITTEN PROCEDURES

B2.1 PREPARATION

GUIDANCE ON RULE B2.1.1

It should be noted that for work or testing under an AWP it will, in almost every case, be necessary to undertake some preliminary operational work or testing under the terms of a ROP. One clear example of this is where the WTG needs to be selected to 'local control' and 'shut down' immediately prior to the work or testing under the AWP. In such cases, it will not be necessary to apply the requirements of Wind Turbine Safety Rule C4.2 and where appropriate, any safety precautions that would otherwise have been stated on the ROP should instead be included on the AWP.

It is not sufficient merely to state the hazards associated with the work or testing; the AWP must also specify all the positive precautions that need to be taken to achieve safety from the system. Apart from isolations, additional precautions may include instructions to achieve and maintain safety from the system.

They include:

- on the sequence or method of work or testing;
- on the avoidance of hazards from adjacent plant and apparatus;
- on how to deal with hazardous substances associated with the work or testing;
- on the provision of a standard of ventilation, and
- on the wearing of PPE.

Reference may also be made to other documents, such as MIs, work instructions, method statements or service manuals, but the documents in question must be available to the AT carrying out the work. If copies are not held by the AT, it may be necessary for copies of such documents to be issued to him/her when the work is planned.

Although it is not absolutely essential for the AE to prepare the AWP in person, they should be directly involved in the process. It must be clearly understood that the AE is responsible for all aspects of achieving safety from the system; confirmation of his/her satisfaction is implicit within the requirement for every AWP to be formally approved.

Company 'A' should specify the details of how the formal approval of AWP's can be confirmed in an auditable manner. ATs, OCs and wind farm asset owners should be readily able to confirm that an AWP has been formally 'approved' and determine the name of the AE.

GUIDANCE ON RULE B2.1.2

Any requirement to obtain a selected person's report must be stated on the AWP. The way in which any additional precautions, highlighted by the selected person, are implemented, either prior to or during the work or testing should be specified in a MI.

Consultation between the AE and a selected person may be necessary during the preparation of an AWP. It is the responsibility of the AE to ensure that such consultation takes place where the circumstances warrant it, for example where the work or testing is involved in the use of hazardous substances.

GUIDANCE ON RULE B2.1.3

In certain circumstances, perhaps due to the complexity or specialist nature of the work or testing, the AE may wish to specify requirements for all or part of that work or testing to be given personal supervision. In this case, the AWP should specify exactly which parts of the work or testing are to be given personal supervision, and who should provide it.

Any requirement to provide personal supervision must be stated on the AWP. If no requirement to provide personal supervision is specified on the AWP, then the AE is only required to provide immediate supervision.

B2.2 IMPLEMENTATION

GUIDANCE ON RULE B2.2.1

The AE must ensure that the allowable work or testing is clearly stated on the AWP. The AT must ensure that only the specified work or testing is carried out.

A pro-forma showing the recommended layout for AWP is provided as Rule B5. Company 'A' may decide to modify the layout to suit its own requirements, but the wording and sequence of the layout must be retained.

GUIDANCE ON RULE B2.2.2

The intent of Rule B2.2.2 is to ensure that the AT actually has a copy of the AWP in his/her possession before the start of work or testing. This AWP would normally be a paper copy to facilitate signing of signature checkpoints, (if Company 'A' wished to implement an electronic system for the issue and use of AWP, then the detailed requirements of this must be stated in a MI; see also Wind Turbine Safety Rules Support Procedure P8).

The detailed requirements of how Company 'A' ensures that ATs are issued with a copy of the AWP must be specified in a MI.

GUIDANCE ON RULE B2.2.3

It should be noted that for work or testing under an AWP it will, in almost every case, be necessary to undertake some preliminary operational work or testing under the terms of a ROP. One clear example of this is where the WTG needs to be selected to 'local control' and 'shut down' immediately prior to the work or testing under the AWP. In such cases it will not be necessary to apply the requirements of Wind Turbine Safety Rule C4.2 and where appropriate, any safety precautions that would otherwise have been stated on the ROP should instead be included on the AWP.

See also Guidance under Rule C2.2

GUIDANCE ON RULE B2.2.4

The AT responsible for the application of safety precautions in accordance with the AWP should complete and sign each signature checkpoint. This should not preclude another person physically applying safety precautions under personal supervision of the AT. The AT in these circumstances is still personally responsible for ensuring that the precautions have been taken and that the relevant equipment is satisfactorily isolated, locked and caution notices applied as required before completing and signing the record.

Envelopes containing safety keys or other removable isolating devices must be labelled with details of the isolation, the safety precaution they secure, and of the relevant AWP with which they are associated.

Where two or more AWP are to be in force simultaneously on the same wind turbine, they should be held by the same AT. In addition, any point of isolation that is common to more than one AWP must be secured with a separate safety lock for each AWP and the safety keys placed in separate envelopes, labelled as specified. This is to minimise the risk of safety precautions being inadvertently removed at the conclusion of one AWP and endangering personnel still working under the outstanding AWP. The requirements of Rules A7.6 and B2.2.6 must be met at all times.

GUIDANCE ON RULE B2.2.5

It is important that ATs fully understand the processes described in Rule B2.2.5. This understanding should be confirmed by Company 'A' as part of the formal appointment process (authorisation), required under Wind Turbine Safety Rule Support Procedure P6.

GUIDANCE ON RULE B2.2.6

In essence, the purpose of this Rule is to ensure that work or testing is not carried out in parallel in circumstances where the safety precautions stated on one AWP would be in conflict with those stated on another. However, in some situations it might be perfectly safe for two jobs to be undertaken in parallel, in which case Company 'A' must set out in a MI its criteria for allowing such parallel work or testing to take place.

The key factor is that no work or testing activity must be carried out in parallel with another if there are conflicting safety precautions or conflicting requirements in the application of these Wind Turbine Safety Rules. Particular care must be exercised in circumstances when an AWP allows the ROMP supplies.

The following information has been produced to assist Company 'A' in providing an interpretation of Safety Rule B2.2.6:

- (i) Effectively, Safety Rule B2.2.6 means that no more than one AWP can be in force on any individual component of plant/LV apparatus within any one WTG. Hence, if work or testing is taking place on a specific component, such as the gearbox or generator of any WTG, then only one AWP can be in force at any given time. However, if an AT, with a single working party, was required to carry out several jobs on a single component within the WTG one after the other, with each job requiring a different AWP, then it would be permissible for the AT to enact the transfer of control (TOC) process with the OC for all of those jobs at the start of the work period and then complete each of them sequentially by working through each AWP in turn and cancelling it at the end of each task. On completion of the final job, the TOC process would then be conducted from that AT to the OC following cancellation of the final AWP. At that point, the AT would confirm to the OC that the work had been completed under each of the AWP's in question.
 - (ii) If work is required on different components within the WTG, where that work will be carried out in parallel by a number of working parties, then additional safeguards will be required to ensure that there are no conflicting safety implications. These additional safeguards are:
 - Proper work planning should avoid the need for parallel work activities wherever possible.
 - Where parallel working is considered to be unavoidable then the number of parallel work activities should be kept to an absolute minimum (Company 'A' could put in place an absolute limit of parallel work activities (e.g. 'under no circumstances shall more than three work activities take place in parallel on any individual WTG').
 - There shall be no ROMP associated with any of the AWP's.
 - None of the AWP's shall have any requirement for 'testing'.
 - None of the AWP's shall have any specified requirement to obtain a selected person's report, (this restriction will also include any AWP that might have implications for 'confined space' working, hazardous substances and/or hot work).
 - None of the AWP's shall have any specified requirement for the AT to provide personal supervision.
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- The isolation requirements of all AWP's must be met in full, (this might mean that some form of multi hasp locking device will be required to ensure that POI can be locked/cautioned independently for each of the AWP's concerned).
- An AE must review all of the AWP's concerned with each of the parallel work activities, to ensure that there are no conflicts in the safety precautions (this assessment will consider potential conflicts in both safety from the system and general safety).
- The AE must formally record the review of the AWP's that have been assessed for parallel work activities, (any Company 'A' MI should outline a procedure, which ensures that the OC clearly understands that parallel work activities have been assessed and agreed by the AE before the TOC process is completed).
- All parallel work activities must be controlled by a single AT, (in practice this will mean that one AT will be in charge of all the working parties and they will be responsible for providing immediate supervision, establishing/maintaining general safety, and achieving safety from the system under each of the AWP's).

GUIDANCE ON RULE B2.2.7

The AWP should clearly specify the work or testing that is allowed. The AE must limit the work or testing to that which is specified on the AWP.

Any additional work or testing that might be identified (during the course of the work or testing specified on the AWP), shall be referred to an AE who shall ensure that a further AWP is produced and approved to take account of that additional work or testing.

Under such circumstances, all work or testing under the original AWP must stop until a new AWP is issued. The original AWP cannot be cancelled until a new AWP is issued to cover both the original and the additional work or testing. Once the safety precautions specified on the new AWP are put in place, and the signature checkpoint has been completed by the AT, the original AWP can be cancelled. In these situations, the circumstances surrounding the issue of a second AWP should be recorded in the clearance section of the original AWP.

GUIDANCE ON RULE B2.2.8

Where the AWP identifies a need to obtain a selected person's report, then the AT must ensure that one is requested prior to the start of work or testing. The AT shall obtain a copy of the selected person's report and ensure that they understand and implement the precautions stated on it.

The AT must not allow the work or testing to proceed until any additional precautions stated on the selected person's report have been implemented. The exact details of how the requirements from any selected person's report are implemented must be clarified in a MI. This MI might indicate a requirement for the AT to formally record and sign to confirm that the additional precautions stated on the selected person's report have been implemented.

GUIDANCE ON RULE B2.3.1

The surrender procedure is a process which ensures that a written record exists when work or testing under an AWP extends beyond one work period (e.g. work or testing might stop at the end of one day and resume the next), or when the work or testing is transferred from one AT to another. When work is transferred from one AT to another, this would normally be carried out face-to-face; however, the surrender process does allow for the transfer without a face-to-face meeting.

It should be noted that the surrender process is used whenever work or testing under an AWP is to continue into a new work period, even when it is anticipated that the same AT will continue that work or testing. (Refer to Annex C).

GUIDANCE ON RULE B2.3.2

In addition to providing a written record, the surrender process ensures that an AWP is kept in a safe place when no work or testing is taking place. The AT must not leave the wind farm location without signing Part 1 of the surrender record and placing the AWP in safe custody. The means of achieving safe custody for AWP, associated documents, keys and other items must be specified in a Company 'A' MI, but regardless of how safe custody is achieved, the AWP must remain on site at all times.

GUIDANCE ON RULE B2.3.3

In cases where the work or testing is to be resumed by the same AT the surrender record provides a confirmation of the progress of that work or testing from day to day. In most cases, it would be expected that the AT would, as a matter of course, confirm the safety precautions prior to resumption of work. However, when the AT suspects that a problem may have occurred he/she would be formally required to record the confirmation.

GUIDANCE ON RULE B2.3.4

While the preferred method of surrender of work or testing from one AT to another involves a face-to-face meeting, this will not always be possible. Where the face-to-face meeting does not take place, the AT, when signing Part 2 of the surrender record, should treat everything with caution and must satisfy themselves that all safety precautions have been taken, that they have control over the POI (e.g. by taking possession of safety keys), and that they fully understand the current circumstances in regard to progress of the work or testing. No AT should sign on to the surrender record of an AWP when there are any doubts or concerns over matters of safety.

Where no face-to-face surrender takes place, it is a mandatory requirement for the new AT to personally review all of the previously applied safety precautions and initial against all signature checkpoints to confirm that this has been done.

It is important that any face-to-face meeting associated with the surrender process includes a thorough review of the AWP and associated safety precautions, the isolations applied, the means of ensuring isolations remain in place, the handover of keys, documents etc. and an explanation of the progress of the work or testing.

GUIDANCE ON RULE B2.3.5

If the AT needs to temporarily discontinue work or testing for some reason, this should be clearly stated on the AWP. The procedure for this should be defined in a MI.

Examples of where work or testing might need to be temporarily discontinued could be:

- To allow specialist non-destructive testing to occur at some point during the work activity to ensure the standard of repairs prior to reassembly of the wind turbine.
- When an item of plant or apparatus might need to go off site for repair and where no replacement is immediately available.

GUIDANCE ON RULE B2.3.6

The OC should be made aware of the status of plant and apparatus at the end of any working period (e.g. the AT should inform the operation controller of the progress of any work or testing at the end of each working day and before leaving the site). The details of this process should be set down in a MI which should also contain details of the information that needs to be recorded. At the very least, Company 'A' should require that ATs inform OCs of their presence on and off site at the beginning and end of the working day.

It will not be possible to enact a formal TOC in these circumstances because the AWP cannot be cleared and cancelled and the WTG cannot be returned to operation.

In circumstances when the work or testing is to be discontinued by one AT and continued by another, it will be necessary to inform the OC immediately so that the TOC can be enacted with the new AT.

GUIDANCE ON RULE B2.4.1

The AT signing the clearance signature checkpoint must be the current recipient. If the work or testing has extended beyond one working day then section 2 of the transfer record must have been completed before the AT can sign the clearance signature checkpoint.

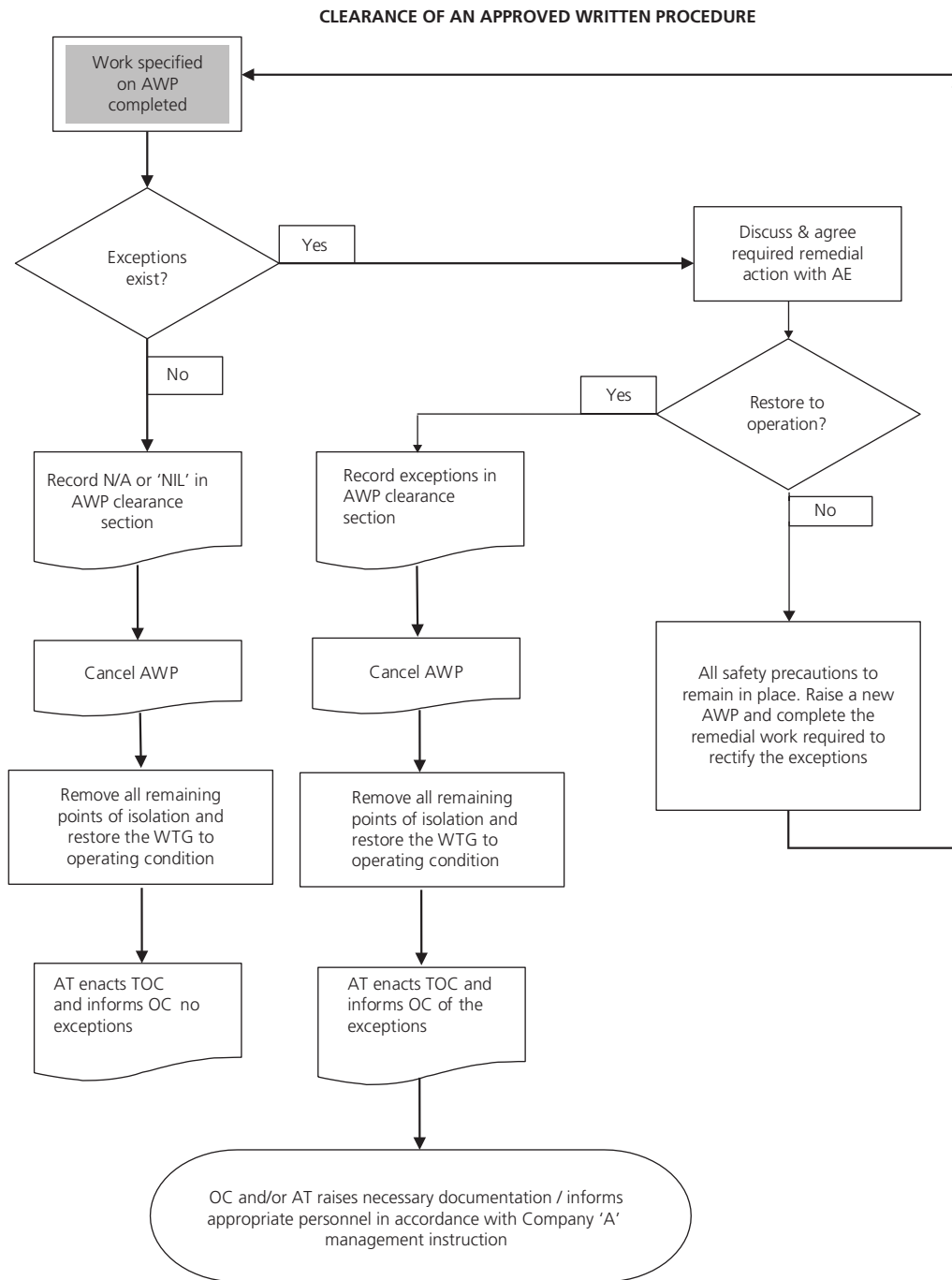
In signing the clearance signature checkpoint, the AT is in effect making a declaration as to whether the work or testing is complete and whether the wind turbine is in a state such that it can be returned to its normal operational condition, or whether there are any restrictions to normal operation. In the case of the former (i.e. all work or testing is complete and there are no restrictions to normal operation), then the AT should record 'N/A' or 'NIL' in the allocated space above his/her signature. If the work or testing is not complete or there are restrictions to returning the wind turbine to its normal operational condition, then the AT should record the exact details in the allocated space above his/her signature.

It should be noted that in certain circumstances, such as routine servicing, the overall work programme can be split down into a number of discrete packages. At the end of each of these discrete packages the wind turbine status is often such that it can be safely returned to normal operation. Having reached such a stage in the overall work programme, the AT can complete the clearance signature checkpoint by recording the status of the job and making a clear statement that the wind turbine is in a safe condition to be returned to normal operation. The requirements of Rule B2.4.2 can now be met.

In the circumstances described in the previous paragraph, the work or testing can only be resumed when the requirements of a new AWP are applied in order to complete the remainder of the work programme. See also guidance in Philosophy 2.6.

The following flowchart provides some generic guidance on the various actions to be taken, dependent upon how the clearance section of the AWP is completed. Company 'A' will need to provide more detailed instructions on the procedures to be followed in its own MIs.

CLEARANCE OF AN APPROVED WRITTEN PROCEDURE



GUIDANCE ON RULE B2.4.2

In addition to ensuring that all items are accounted for, the AT must also take account of any information recorded in the clearance section of the AWP before completing the cancellation signature checkpoint. If there are any restrictions to the operational condition of the wind turbine then the AT must inform the OC of the details.

If the AT believes that there are circumstances where the return of a wind turbine to its operational condition could present a danger to persons then he/she should not sign the cancellation signature checkpoint, or de-isolate or remove the safety precautions. The AE and OC should be informed of the circumstances.

The AT must only sign the cancellation signature checkpoint of the AWP if he/she is entirely satisfied that any remaining POI can be safely removed.

GUIDANCE ON RULE B2.4.3

Once the WTG is fully operational, the AT must enact the TOC procedure with the OC. Any relevant information concerning the AWP, exceptions, the operational status of the WTG, etc. must be passed to the OC.

It should be noted that on completion of work or testing under an AWP it will, in almost every case, be necessary to undertake some final operational work or testing under the terms of a ROP. One clear example of this is where the WTG needs to be returned to service following 'start-up', immediately after cancellation of the AWP and following removal of all remaining POI. In such cases, it will not be necessary to apply the requirements of Wind Turbine Safety Rule C4.2 and where appropriate, any safety precautions that would otherwise have been stated on the ROP should instead be included on the AWP.

GUIDANCE ON RULE B2.4.4

Company 'A' must produce a MI to specify how, and for what time period, the completed AWP and associated documents, should be retained. In making this judgement, due consideration should be given to company document control standards and good practice.

B3 ROUTINE OPERATING PROCEDURES

GUIDANCE ON RULE B3.1 and B3.2

Company 'A' must only allow operational work or testing to take place under a ROP with its full knowledge and agreement.

Company 'A' should specify, in a MI, the exact requirements for an AE to agree that an AWP is not required. See guidance on Rule C3.2.

Only when they are completely satisfied that all reasonable steps have been taken to ensure that the operational work or testing can be undertaken safely without an AWP, should Company 'A' give its agreement for the use of a ROP. The point of concern here is that work or testing might be carried out under a ROP when it would be inappropriate to do so.

It should be noted that for work or testing under an AWP it will, in almost every case, be necessary to undertake some preliminary operational work or testing under the terms of a ROP. One clear example of this is where the WTG needs to be selected to 'local control' and 'shut down' immediately prior to the work or testing under the AWP. In such cases it will not be necessary to apply the requirements of Wind Turbine Safety Rule C4.2 and where appropriate, any safety precautions that would otherwise have been stated on the ROP should instead be included on the AWP.

A similar process to that described in the previous paragraph will be applied following cancellation of an AWP and removal of remaining safety precautions when the WTG is returned to service following start-up.

GUIDANCE ON RULE B3.3

The interpretation of the requirement for a ROP to be 'written' must be decided by Company 'A' and the details highlighted in a MI.

The pro-forma to be used by Company 'A' for any bespoke ROP should be included in a MI.

It should be noted that there is no requirement under the WTSR for the competent technician to sign a formal clearance and/or cancellation section following work or testing under a ROP. However, if Company 'A' wishes to include a formal clearance and/or cancellation section in its ROPs then they can do this under the terms of Rule B3.3.

GUIDANCE ON RULE B3.4

The competent technician is required to inform the OC when work or testing being carried out under the terms of a ROP is complete. This requirement is clearly stated in Rule C4.2(iv).

It should be noted that for work or testing under an AWP it will, in almost every case, be necessary to undertake some preliminary operational work or testing under the terms of a ROP. One clear example of this is where the WTG needs to be selected to 'local control' and 'shut down' immediately prior to the work or testing under the AWP. In such cases it will not be necessary to apply the requirements of Wind Turbine Safety Rule C4.2 and where appropriate, any safety precautions that would otherwise have been stated on the ROP should instead be included on the AWP.

A similar process to that described in the previous paragraph will be applied following cancellation of an AWP and removal of remaining safety precautions when the WTG is returned to service following start-up.

In both of the cases specified here, the TOC process under the AWP will satisfy the requirements of Rule B3.4.

See guidance on Rule C4.2

It should be noted that when a competent technician completes work or testing under the terms of a ROP , there is no requirement stated in the WTSR for a formal clearance to be signed, (this can be an optional requirement should Company 'A' decide that it is necessary – see guidance under Rule B3.3). However, the competent technician does have responsibilities on completion of work under a ROP and these are stated in Rule C4.7.

See guidance on Rule C4.7

B4 LOSS OF SAFETY KEY/APPROVED WRITTEN PROCEDURE OR ABSENCE OF AN AUTHORISED TECHNICIAN

GUIDANCE ON RULE B4.1

A MI should detail the actions required when an AWP is lost, a safety key no longer available and the AT leading the working party and in charge of the AWP becomes absent. This MI would constitute an approved procedure as defined under general provision 3 (GP3) of the Wind Turbine Safety Rules (see also Wind Turbine Safety Rules Support Procedure P1). Any of the circumstances described in Rule B4.1 will mean that the requirements of Part B of the Wind Turbine Safety Rules cannot be met and therefore an Approved GP3 procedure must be produced.

B5 EXAMPLE OF AN APPROVED WRITTEN PROCEDURE PRO-FORMA

GUIDANCE ON RULE B5

The example AWP pro-forma, as contained in Rule B5, represents a minimum standard.

Any AWP produced by Company 'A' must contain all of the relevant sections as given in the example pro-forma from Rule B5. In addition, the wording of those sections must be exactly as stated in Rule B5

- (iii) All sections of the AWP must be in the same sequence as that given in Rule B5.
- (iv) A ROMP section must only be included on the AWP where it is absolutely essential to the completion of the work or testing, (for clarity, where the ROMP supplies is not absolutely essential for the completion of the work or testing, no ROMP section should be included on the AWP).
- (v) Company 'A' can, at its discretion, make further minor additions to the AWP above Section 1 'Work Details'. Some examples of these further additions might include: the next review date; the name of any AE or other person that checked the AWP prior to approval; any Job Number/Work Order Number/Maintenance Order Number.

Next Review Date:	
Checked By (name):	
Work Order No.	

For further guidance on the completion of AWPs see Addenda B1 and B2.

COMPANY 'A'	WIND TURBINE SAFETY RULES Approved written procedure	AWP No.
Approving authorising engineer		
Signature:	Date:	Rev:

1.0 Work Details:

Step	Detail	
1.1	Wind farm location:	WTG No.
1.2	Plant / apparatus identification:	
1.3	Work / testing to be done:	
1.4	Associated documents:	
1.5	Date of work:	

2.0 Transfer of Control (Release):

Step	Detail	
2.1	Time:	Operational controller Print name:
2.2	Authorised technician	Print name:

3.0 Establish Safety Precautions:

Step	Operation		
3.1	Establish local control of the wind turbine		
3.2	Establish general safety		
3.3	POI application:	Time:	Sign:
	POI application:	Time:	Sign:
3.4	Precautions: I certify that the precautions listed in steps 3.1 to above have been completed which establish both general safety and safety from the system in order to carry out the work / testing specified in step 1.3. Signature checkpoint: Time: Date:		
3.5	Carry out the work / testing		

3.6	Restoration of motive power / supplies: YES / NO							
	The following motive power / supplies may be restored:							
	For the following essential work / testing:							
	Remove							
	Reapply							
3.7	End of work / testing							
3.8	POI removal:				Time:		Sign:	
	POI removal:				Time:		Sign:	
3.9	Clearance:							
	I certify that the work or testing under this AWP is now complete and all persons in my working party have been withdrawn and warned that it is no longer safe to continue working or testing on the plant / apparatus. All gear, tools and loose equipment have been removed. All guards covers and access doors have been replaced. The WTG is in a safe condition to be returned to service. Except for the following limitations or restrictions: ** Signature checkpoint: Time: Date:							

4.0 Return to Service:

Step	Operation
4.1	Cancellation: I certify that all items issued under this AWP have been accounted for and that it is safe to remove all remaining points of isolation. The OC will be informed of the completion of work / testing under this AWP and of any restrictions on returning the Plant / Apparatus to its normal operational condition. Signature checkpoint: Time: Date:
4.2	POI Removal: (if required)

5.0 Transfer of Control (Return):

Step	Detail
5.1	<p>I have informed the operational controller (PRINT NAME) that the work or testing is complete, this AWP is now cancelled, and all points of isolation have been removed. I have confirmed any limitations or restrictions on returning the plant / apparatus to its normal operational condition. Signature Checkpoint: Time: Date:</p>

6.0 Surrender Record:

Part 1			Part 2		Part 3
Authorised technician surrendering this AWP	Time / date	Comments: Indicate the point in the work / testing programme reached	Authorised technician receiving this AWP	Time / date	Safety precautions confirmed

* Delete this step if not applicable

** Record N/A or NIL if no exceptions

ADDENDUM B1

COMPANY 'A' WIND TURBINE SAFETY RULES

GUIDANCE ON COMPLETION OF APPROVED WRITTEN PROCEDURES

1 GENERAL CONSIDERATIONS

1.1 LEGIBILITY

The details entered on any AWP must be clear and legible.

1.2 ABBREVIATIONS

Any use of abbreviations must be restricted to those which are approved by Company 'A' and listed in a MI.

1.3 PLANT AND APPARATUS IDENTIFICATION

The AE, before approving any written procedure, must ensure that there is no inconsistency between the identification recorded on the written procedure and that which appears on the plant/apparatus itself.

The AT, implementing the requirements of an AWP, must verify that there is no inconsistency between the identification recorded on the AWP and that appearing on the plant/apparatus itself.

1.4 CORRECTNESS OF ENTRIES

The AE, before approving any written procedure, must ensure that all the requirements of the Wind Turbine Safety Rules have been met. In particular, the AE must, as part of the checks required under Rule B2.1.1 and enacting his duties under Rule C3, ensure that all entries are correct.

The AT implementing the requirements of an AWP must fulfil the precise requirements of each section and indicate that all instructions have been carried out correctly before signing to confirm at each signature checkpoint. In the clearance section, the full details of any exceptions are required or 'N/A' or 'NIL' must be recorded as appropriate, (see guidance under Rule B2.4.1).

1.5 ADDITIONS AND ALTERATIONS

In implementing the requirements of an AWP, the AT is not allowed to change or alter those requirements or implement any additional requirements. If the AT has any concerns over the contents of the AWP, the general provision 4 procedure for 'objections on safety grounds' should be followed.

In any section of an AWP where information is completed by the AT, a line should be drawn through the remaining blank spaces prior to the relevant signature checkpoint being signed, to prevent unauthorised additions being subsequently entered.

In the event that the AT makes a mistake when completing an entry on an AWP, he/she should simply cross out the incorrect entry, initial and date against the crossing out and then proceed to enter the correct wording. The AT should never attempt to overwrite incorrect entries or use correction fluid.

In accordance with Rule B2.2.8, the AT is required to implement any additional precautions stated on any selected person's report before allowing the work or testing to proceed. The details of how this requirement is to be met must be outlined in a MI. See also guidance on Rule 2.2.8.

1.6 NUMBERING

The AE should give each written procedure a unique number at the time when it is approved. The details of the numbering system to be used for each wind farm location should be specified in a MI. Each page should have a page number and number of pages.

1.7 USE OF CONTINUATION SHEETS

If the space available in any section of the AWP is insufficient to record the information required, a continuation sheet may be used. A continuation sheet should be identified as belonging with its associated AWP, be completed and signed by the AT, and be physically attached to that AWP.

1.8 SAFETY KEYS ASSOCIATED WITH APPROVED WRITTEN PROCEDURES

Safety keys and/or other removable isolating devices associated with the AWP should be retained in safe custody in line with a MI.

1.9 COMPLETION BY PERSONS UNDER TRAINING

Where written procedures are prepared by persons training to become AEs, as part of a training exercise, safeguards should be specified in MIs to ensure that these training documents cannot be mistaken for AWP.

The final stages of training for an AT may allow for that individual to complete sections of AWP's under the personal supervision of the AT responsible for the training of that person. It must be emphasised, however, that the responsibility for signing any signature checkpoint remains with the AT and only he/she must sign it.

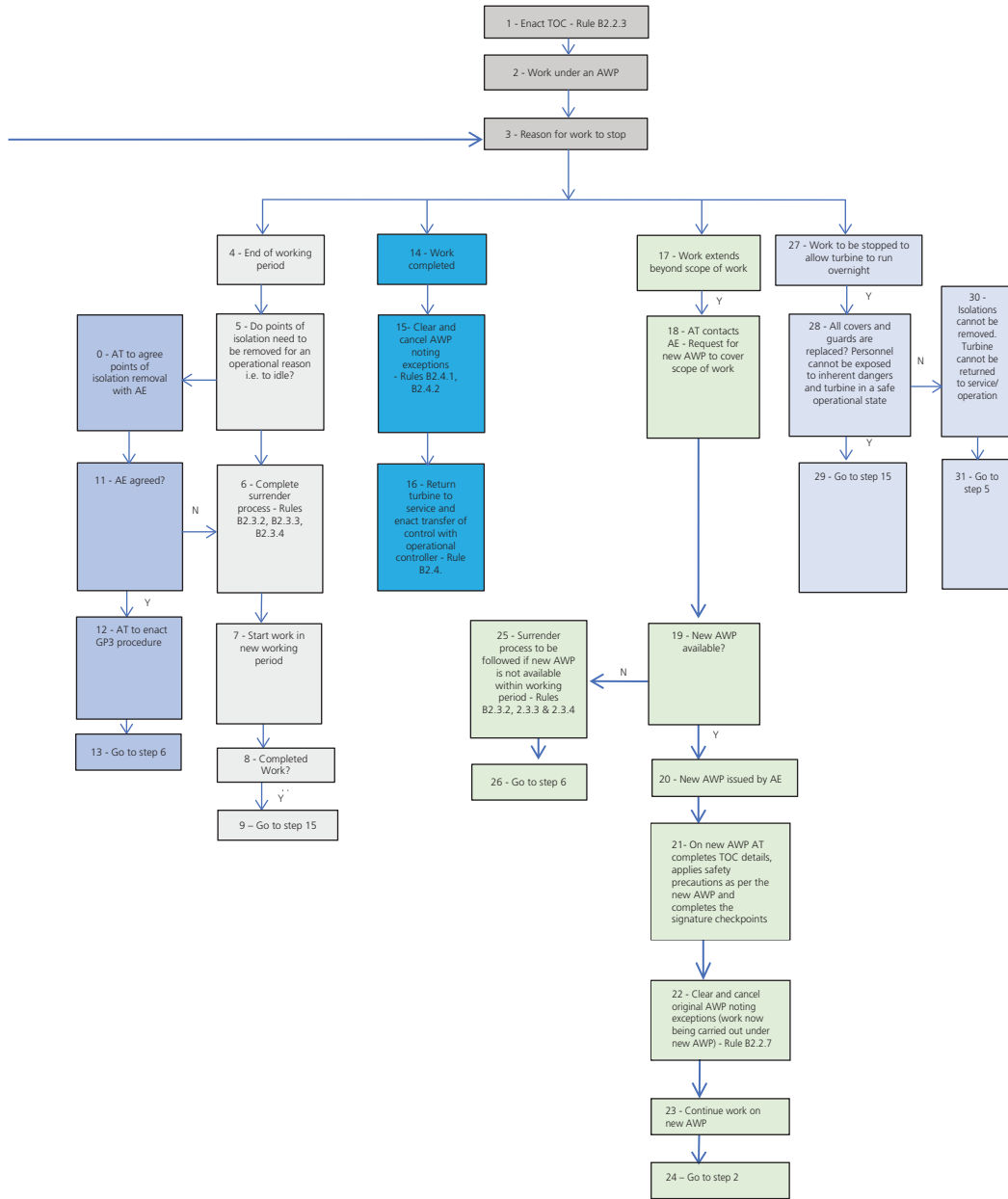
ADDENDUM B2

GUIDANCE FOR COMPLETION OF THE SURRENDER/ CANCELLATION PROCESS WHEN USING AN APPROVED WRITTEN PROCEDURE

This addendum contains:

1. A guidance flow chart to manage work flow and AWP's when confronted with a number of alternative scenarios. This includes trying to undertake further work on any given WTG or when trying to return a WTG to service.
2. The scenarios considered include:
 - a) Work completed.
 - b) End of working period.
 - c) Work extending beyond the work scope.
 - d) Stopping work that requires the WTG to be placed in operation or partial operation overnight.
 - e) Where isolations need to be removed under specific circumstances in accordance with an approved special instruction (GP3 procedure).

TRANSFER FLOW CHART



PART C – RESPONSIBILITIES OF PERSONS

This section only contains guidance on each rule in Part C of the WTSR and therefore the specific rule must be read in conjunction with the guidance in this section.

C1 GENERAL

GUIDANCE ON RULE C1.1

As stated, all persons who are appointed to undertake duties under the Wind Turbine Safety Rules must carry out their duties diligently. In addition to the Rules themselves, the requirements specified under MIs must be met.

Company 'A' must ensure that persons are made aware of their duties and responsibilities (e.g., through proper training and supervision). Correct implementation of the Rules should be monitored through suitable audit programmes.

GUIDANCE ON RULE C1.2

Any individual may be appointed for as many or as few responsibilities under the Rules, Support Procedure P6 and any relevant MIs. Company 'A' must implement steps to ensure that persons being appointed are competent to undertake the duties concerned.

It is possible for an individual to have an extremely limited appointment under the Rules, but they must still be competent to undertake their designated duties and be absolutely clear about what they are allowed to do and what they are not allowed to do.

GUIDANCE ON RULE C1.3

All persons with designated responsibilities under the Wind Turbine Safety Rules should be formally appointed in writing before undertaking any of those duties.

Procedures for the formal appointment of persons should be in accordance with Wind Turbine Safety Rules Support Procedure P6 and any relevant MIs.

It is of fundamental importance that the written certificate of appointment clearly states what the individual concerned is allowed to do and lists any restrictions, exclusions or limitations. For example, no person must be allowed to undertake any work or testing in connection with Rules A3.12(viii); A3.13(i) and/or A7.6 unless they have been specifically appointed in writing to do so.

GUIDANCE ON RULES C1.4

This section describes the areas of responsibility of all persons involved in achieving safety from the system. These include:

1. Safety coordination:
Carrying out a formal TOC (release) with an OC before work or testing commences, and using AWP or ROPs to allow the work or testing to be carried out safely

Carrying out a formal TOC (return) with an OC when work or testing is finished and confirming any limitations or restrictions and cancellation of the written procedure.

2. Making safe/restoration of plant and LV apparatus – which includes:

Applying isolations and/or safety precautions before each phase of the work or testing to ensure it is safe for work or testing to commence and confirming such actions in writing.

When work or testing is finished, removing isolations and safety precautions to restore the wind turbine to service and confirm such actions in writing.

3. Work or testing – which includes:

After confirmation that work or testing can proceed, execution of the required work or testing to its completion or termination in line with AWP, ROPs and associated documents.

C2 AUTHORISED TECHNICIANS

GUIDANCE ON RULE C2.1

At each wind farm location, a list of ATs showing the responsibilities for which they are nominated should be produced. In order that an AT can carry out work or testing under a particular AWP, he/she must also be technically competent to perform that work or testing. In order that this can be demonstrated, that individual must already be appointed as a competent technician.

The appointment of persons to undertake duties as ATs does not remove from them, or from any other persons, any responsibilities they may have for general supervisory or managerial duties.

With respect to contractor's staff:

It is the contractor's responsibility to make recommendations to Company 'A' regarding suitable persons for appointment as competent technicians, (with a request for any of those persons to be subsequently appointed as ATs, taking into account whether those individuals have sufficient technical knowledge and/or experience to be able to carry out the contract work or testing safely under an AWP).

The contractor should provide any information and any evidence of training, qualifications, skills and competency as might reasonably be requested by Company 'A'.

It is the responsibility of the appropriate manager of the organisation to assess and confirm the basis of any recommendations from the contractor to a standard deemed to be acceptable to Company 'A', (these standards should be stipulated in a MI);

Once satisfied that the request made by the contractor meets the Company 'A' standards, then the appropriate manager should ensure that these recommended contractor's staff are made familiar with the relevant sections of the Wind Turbine Safety Rules and associated local procedures/MIs and make necessary arrangements for their formal appointment under the requirements of Wind Turbine Safety Rules Procedure P6.

GUIDANCE ON RULE C2.1.1

Once appointed, it is the responsibility of the AT to comply with the requirements of the Wind Turbine Safety Rules. However, Company 'A' and/or the wind farm asset owner should establish an adequate support process through normal management functions (e.g: work management/planning; TOC; instruction/supervision; monitoring/audit; and/or refresher training).

GUIDANCE ON RULE C2.1.2

The AT must ensure that both he/she and all other persons in the working party follow all of the Company 'A' requirements for general safety.

GUIDANCE ON RULE C2.1.3(ii)

The AT must ensure that both they and all members of the working party follow all the requirements specified on the AWP, (and any requirements of a selected person's report

where applicable). The AT must work within all specified limits and must never exceed the work or testing stated on the AWP.

GUIDANCE ON RULE C2.2

The TOC process is pivotal in ensuring that Company 'A' and/or the wind farm asset owner can demonstrate that it exercises managerial control over its wind farm locations. Due to its potential complexity, the exact details of how TOC is to be enacted should be detailed in MIs.

GUIDANCE ON RULE C2.2(i)

The AT must report his/her presence on site to the OC at the earliest possible opportunity. Company 'A' must ensure that adequate communication links are available between the OC and each wind farm location.

GUIDANCE ON RULE C2.2(ii)

Company 'A' must put in place a suitably robust system such that the OC can confirm that the AWP is valid. This process could be linked to a suitable work management/control system.

If the OC is not satisfied that the work or testing will be carried out under a valid AWP, then TOC must not take place.

GUIDANCE ON RULE C2.2(iii)

Once the AWP has been validated to an acceptable standard, the OC can then agree to TOC. The details to be recorded should be formal, (the exact nature of what details and how the information is to be recorded must be outlined in a MI).

The AT must complete section 2 'TOC (release)' on the AWP.

GUIDANCE ON RULE C2.2(iv)

The AT must confirm that all work or testing detailed on the AWP is complete. All members of the working party must be informed of this fact by the AT.

The AT must then complete the clearance and cancellation sections of the AWP and return the WTG to its normal operating condition.

For further guidance on the clearance of an AWP, see Guidance on Rule B2.4.1.

For further guidance on the cancellation of an AWP, see Guidance on Rule B2.4.2.

GUIDANCE ON RULE C2.2(v)

When satisfied that the WTG is operating normally, the AT must enact TOC (return) with the OC. All relevant information must be given by the AT to the OC (the exact nature of what details must be communicated and how the information is to be recorded must be outlined in a MI). The AT must inform the OC of any restrictions or limitations to the operational condition of the WTG. The AT must complete section 5 'TOC (return)' on the AWP.

GUIDANCE ON RULE C2.2(vi)

In circumstances where the AT is to undertake several jobs on one WTG under several different AWP, then the OC might be requested to enact a single TOC for all of the proposed work or testing. If this is agreed, then the AT must complete all of the work or testing under the first AWP before moving on to the next.

On completion of the first job, the clearance section of the associated AWP must be completed and the AT must record, as an exception, the fact that further work is to continue under the next AWP. The cancellation section of the first AWP may then be completed and the AT must decide whether to de-isolate any remaining POI or retain the safety keys for the work or testing under the next AWP. Work may now continue under the next AWP.

When work or testing under the last AWP is complete, then the AT must complete the clearance and cancellation sections and must now remove all remaining POI and return the WTG to its normal operating condition. The AT must now enact TOC (return) with the OC, see Rule C2.2(v).

At this point the AT must complete section 5 'TOC (return)' on all of the AWP under which work has been carried out.

GUIDANCE ON RULE C2.3(i) to (iv)

Company 'A' must produce MIs to outline how it wishes the requirements of Rule C2.3 to be met.

Once the AT has formally enacted the TOC (release) procedure they are then responsible for that wind turbine. It is the AT who subsequently implements the requirements under the AWP and agrees when the work or testing can start with other members of the working party. It is only possible for one AT to implement the requirements of an AWP; if the working party consists of two or more ATs, then they must agree, in advance, which of them is to be responsible for the work/testing. Whichever AT subsequently signs the signature checkpoints is deemed to be responsible. The responsible AT can instruct other ATs, as per Rule C2.3(iii).

The process of setting the working party to work will include giving instructions in relation to the AWP and general safety. In addition, the AT must ensure that everyone knows exactly what their job is and what is expected of them.

The AT must not allow any of the work or testing to start until all of the safety precautions stated on the AWP are in place to his/her satisfaction and the appropriate signature checkpoint(s) have been completed.

GUIDANCE ON RULE C2.4(i)

The MI referred to in this Rule should outline the details of Company 'A' requirements to achieve safe custody of AWP and keys etc. during the work or testing.

GUIDANCE ON RULE C2.4(ii)

Any requirement to provide personal supervision must be stated on the AWP. If no requirement to provide personal supervision is specified on the AWP, then the authorising technician is only required to provide immediate supervision. See also Rule B2.1.3.

When providing immediate supervision, the AT may leave the working party, providing he/she remains at the wind farm location, but only if they decide that it is safe to do so or as stated in MIs. The AT must then decide at what points in the work or testing, or after what interval of time they will return to the working party to provide appropriate supervision.

GUIDANCE ON RULE C2.4(iii)

During the course of the work or testing, if any hazard arises that was unforeseen, the job must immediately cease. The AT must ensure that all persons are warned to stop work or testing and if necessary removed from the immediate area. The AT must then ensure that the OC and the AE are immediately informed. The AE must then decide upon an appropriate course of action which avoids danger to persons.

GUIDANCE ON RULE C2.5

Company 'A' should give strong consideration to providing further guidance on the surrender of an AWP in the correct application of Rule C2.5 by giving more details in a MI. See Rule B1.2.

GUIDANCE ON RULE C2.5(i)

If at the end of any period of work or testing the job is not complete, then the AT must ensure that all members of the working party are informed that they must stop what they are doing and leave the area. The AT should ensure that the work area is left in a clean and tidy condition and then complete Part 1 of the surrender record. The AT must then place the AWP in safe custody by following Company 'A' MIs.

GUIDANCE ON RULE C2.5(ii)

If the AT in charge of the working party wishes to leave the site then the AWP must first be transferred to another AT. All members of the working party should be informed that they must stop what they are doing and of the reason for the transfer to the new AT. The first AT must then complete Part 1 of the surrender record and discuss the work or testing with the intended recipient.

GUIDANCE ON RULE C2.5(iii)

Following on from Rule C2.5(ii). When satisfied with their understanding the new AT must complete Part 2 of the surrender record; he/she may then instruct the working party to resume the work or testing.

GUIDANCE ON RULE C2.5(iv)

While a face-to-face surrender is the preferred option, this will not always be possible. In circumstances where a face-to-face surrender has not taken place, the new AT must be satisfied that they fully understand all of the contents of the AWP and are fully aware of the current status of the work or testing. The new AT must confirm that Part 1 of the surrender record has been correctly completed by the previous AT. When satisfied, the new AT should complete Part 2 of the surrender record.

At this point, the new AT should confirm that all POI quoted on the AWP are in place and that he/she is in possession of the necessary safety key(s) and/or removable isolating device(s). The new AT should then countersign against the original signature checkpoint(s). The work or testing may now resume.

GUIDANCE ON RULE C2.5(v)

The OC must be informed of the current status of the work or testing on every occasion when a working party leaves the wind farm location and again on each occasion when they return to resume the work or testing.

It will not be possible to enact a formal TOC in these circumstances because the AWP cannot be cleared and cancelled and the WTG cannot be returned to 'normal operation'.

GUIDANCE ON RULE C2.5(vi)

The OC must be informed on each occasion when AWP's are subject to surrender from one AT to another.

GUIDANCE ON RULE C2.6

Company 'A' must ensure that sufficient importance is attached to the requirement to establish and maintain general safety. Company 'A' may wish to confirm that the requirements of Rule C2.6 are being met by implementing a formal system whereby a checklist is completed and signed by the AT.

Company 'A' must also ensure that general safety is given proper consideration when work or testing is resumed following surrender of an AWP, even in circumstances where the work or testing is continued by the same AT.

ATs should have sufficient levels of competence to understand the requirements associated with establishing and maintaining general safety; this would normally result from their previous training and experience. Company 'A' should not nominate any person as a competent technician unless it is satisfied on this point.

ATs have responsibilities under Wind Turbine Safety Rules General Provision 1 for establishing general safety requirements before putting themselves and/or their working party to work, including:

- establishing that a safe means of access and egress is available;
- ensuring that the place of work is safe for the work or testing to progress;
- ensuring that appropriate tools and equipment are available;
- ensuring that any necessary PPE is available, and
- ensuring that a safe method of work is available.

In the event that any requirements relating to general safety are deemed to be deficient by the AT, then they must have the specific authority either to rectify the situation directly (e.g. authorise the erection of a scaffold or other safe means of access), or stop the work/testing from proceeding until the deficiencies have been rectified.

All aspects associated with general safety must be correctly implemented/used and maintained for the duration of the work or testing. In the event that circumstances change, the AT must stop the work or testing until the deficiencies have been rectified.

GUIDANCE ON RULE C2.7(i)

The way in which Company 'A' requires Part B of the Wind Turbine Safety Rules to be implemented must be specified in a MI. See Rule B1.2.

GUIDANCE ON RULE C2.7(ii)

The AT must follow the instructions contained in the AWP and sign each signature checkpoint to confirm that the stated requirements have been met.

GUIDANCE ON RULE C2.7(iii)

The AT must maintain the safety precautions applied under Rule C2.7(ii). Normally this would be achieved by the AT retaining the safety key(s) or removable isolating device(s) in his/her personal possession.

GUIDANCE ON RULE C2.7(iv)

Normally this would be achieved by the AT retaining the AWP in his/her personal possession at the point of work or testing. Company 'A' must provide further guidance on Rule C2.7(iv) as appropriate (e.g. the AWP could be placed in a zip-top plastic wallet along with any safety key(s) and/or removable isolating device(s); these wallets are in some cases lockable to prevent removal of the contents).

GUIDANCE ON RULE C2.7(v)

Any requirements to provide personal supervision as stated on the AWP must be followed by the AT. If no requirement to provide personal supervision is specified on the AWP, then the AE is only required to provide immediate supervision. See also Rule B2.1.3.

When providing immediate supervision, the AT may leave the working party, providing he/she remains at the wind farm location, but only if he/she decides that it is safe to do so. The AT must then decide at what points in the work or testing, or after what interval of time they will return to the working party to provide personal supervision.

GUIDANCE ON RULE C2.8

The requirements for ROMP should be applied by any AT who is specifically appointed for work/testing under Rule A3.12(viii) adjacent to live LV apparatus, under Rule A3.13(i) for work/testing on live LV apparatus or under Rule A7.6 for making of adjustments to the controlling features of wind turbine plant or apparatus while it is in the operating mode.

GUIDANCE ON RULE C2.8(i)

The way in which Company 'A' requires Part B of the Wind Turbine Safety Rules to be implemented must be specified in a MI. See Rule B1.2.

GUIDANCE ON RULE C2.8(ii)

In this case, it is a mandatory requirement for the AT to provide personal supervision to all parts of the work or testing that require ROMP supplies.

GUIDANCE ON RULE C2.8(iii)

The AT must give clear instructions for the removal and reapplication of safety precautions during any period of ROMP supplies. It is always preferable for the AT to personally remove and reapply safety precautions or for it to be done under his/her personal supervision. If this is not possible (e.g. where the work or testing requiring restoration is taking place in the nacelle

but the point of isolation is physically located at the base of the tower), then the AT must ensure that he is satisfied as to how any ROMP supplies and the subsequent reapplication of safety precautions will be controlled.

Where the AE considers that the methods of removal and reapplication of safety precautions during any period of ROMP supplies are not adequate to meet Wind Turbine Safety Rules or statutory requirements, then due consideration should be given by the wind farm asset owner to modification of the installed plant/apparatus.

The AWP must specify how safety from the system is to be maintained during any periods when motive power supplies are restored.

GUIDANCE ON RULE C2.8(iv)

When testing is being carried out under an AWP that allows for ROMP supplies, the AWP must specify how safety from the system and safety from any test equipment is to be maintained during any periods when motive power supplies are restored.

GUIDANCE ON RULE C2.9

See guidance under Rule B2.4.1.

GUIDANCE ON RULE C2.10

See guidance under Rule B2.4.2.

GUIDANCE ON RULE C2.10(i)

The AT must take account of any 'exceptions' recorded in the AWP clearance section. As a rule of thumb, if there are any 'exceptions' noted, it will usually mean that the WTG cannot be safely de-isolated and returned to 'normal safe operation'. See the flowchart provided in guidance under Rule B2.4.1.

GUIDANCE ON RULE C2.10(ii)

The AT must ensure that he/she is in possession of all items such as safety key(s), removable isolating device(s), copy of any associated selected person's report etc. If any items are missing, this will normally involve the implementation of a Wind Turbine Safety Rules General Provision 3 (GP3) Procedure – see Rule B4.

GUIDANCE ON RULE C2.10(iii)

The AT must ensure that he/she fully understands the implication of removing all remaining POI. There have been cases where persons have been injured during the removal of safety precautions (when the WTG is in an unsafe condition). The AT must ensure that all controlling features of the WTG are in a position such that they will not cause danger when the remaining POI are removed.

It should be noted that in some cases the POI might need to be removed in a particular sequence. This should be noted in section 4 of the AWP.

GUIDANCE ON RULE C2.10(iv)

When the AT is satisfied as to these points, (Rule C2.10(i) to (iii)), then he/she should sign the cancellation signature checkpoint and then remove all remaining POI specified on the AWP.

C3 AUTHORISING ENGINEER

GUIDANCE ON RULE C3.1

AEs shall have some or all of the following responsibilities within the limits imposed by their certificate of authorisation.

GUIDANCE ON RULE C3.1.1(i)

The AE must ensure that the safety precautions stated on the AWP are adequate to achieve safety from the system throughout the work or testing.

GUIDANCE ON RULE C3.1.1(ii)

The AE must ensure that the application of all safety precautions is covered by an associated signature checkpoint.

GUIDANCE ON RULE C3.1.1(iii)

The AE should go to great lengths to ensure that when the requirements stated on the AWP are followed then safety from the system will be achieved and maintained throughout the work or testing. This requirement becomes particularly important during any periods of ROMP supplies.

The AE must understand that the AT is not required to make any judgement as to how safety from the system is to be achieved and maintained. The AT is only required to follow the stated requirements on the AWP – this should guarantee safety from the system for both him/her and the working party.

GUIDANCE ON RULE C3.1.2(i)

The AE must ensure that all requirements to vent and purge the plant and/or apparatus are clearly stated on the AWP. In deciding on these requirements, reference must be made to Wind Turbine Safety Rules definitions D22 and D34 and Rule A2.3(iv) and Rule A2.3(v).

The AE must ensure that all requirements to adjust the contents of plant and LV apparatus to a level that avoids danger are clearly stated on the approved written procedure.

When breaking into plant for intrusive maintenance, the contents could represent a hazard to persons. The intent of Rule 2.3(iii) is to draw attention to the fact that the contents must be reduced to a suitable level in order to avoid danger. It is not always necessary to completely empty the contents to make a system safe to work on, which is why the paragraph states 'adjusted to a level which avoids danger'.

This reducing of the level is normally referred to as 'draining' and takes place via drain valves. In some circumstances the drain pipework systems are linked together forming a common drain; in other cases, the drains are not interconnected. In circumstances where drain valves form part of a common interlinked drain system, they must first be opened to reduce the contents to an acceptable level and then shut and locked in the closed position to prevent ingress of the working fluid back into the isolated plant via the drain line. In circumstances where drains are not interconnected they can be left open to the atmosphere and it is common practice to lock them in the open position.

GUIDANCE ON RULE C3.1.2(ii)

The AE must decide if a selected person's report is required to provide specialist advice on any additional precautions that must be taken for the work or testing. If so, this must be clearly stated on the AWP.

Company 'A' MIs should clearly specify how any requirements specified by the selected person are implemented in practice. For clarity, the AE may wish to confirm the Company 'A' MI requirements on the AWP.

GUIDANCE ON RULE C3.1.2(iii)

The AE must ensure that all requirements for the ROMP supplies are clearly stated on the AWP. It is only permissible to specify ROMP supplies in circumstances where this is absolutely essential to the completion of the work or testing.

The AE must specify on the AWP how safety from the system will be maintained during all periods of work or testing when motive power supplies are restored.

The AE should also specify any other precautions, such as the required sequence for the removal and reapplication of POI.

The AE must ensure that the exact POI (that can be removed/reapplied) are stated on the AWP. The exact purpose for allowing the ROMP supplies should also be stated.

GUIDANCE ON RULE C3.1.2(iv)

By giving formal approval to the AWP, the AE is confirming the requirement of Rule C3.1.2(iv).

GUIDANCE ON RULE C3.1.2(v)

The AE must ensure that any requirements for work or testing that require personal supervision are quoted on the AWP. The AE must also specify who is to provide the personal supervision (e.g. AE, selected person, technical specialist, other).

Personal supervision during ROMP supplies must be given by the AT, see Rule C2.8(ii). The AE may decide to confirm this requirement on the AWP.

GUIDANCE ON RULE C3.1.2(vi)

The AE should ensure that requirements stated on the AWP are clear and unambiguous. It must be remembered that the AT will be required to follow the requirements stated on the AWP without any need for reference, consultation or clarification.

GUIDANCE ON RULE C3.2

The exact requirements for agreement of an AE must be specified in a MI. Essentially, the AE is agreeing that the work or testing is considered to be 'routine work' and can therefore be carried out safely without an AWP.

Company 'A' might decide that every ROP needs to be formally documented and 'Approved' by an AE. However, if that is the case then the ROP effectively becomes an AWP.

Alternatively, Company 'A' might decide that the AE simply designates various operational work or testing activities from the manufacturer's service manual as ROPs (e.g. a list could be produced backed up by a statement from an AE along the lines of: 'The following procedures from the manufacturer's service manual are designated as routine and non-intrusive and may be carried out as ROPs without the need for an AWP').

C4 COMPETENT TECHNICIAN

GUIDANCE ON RULE C4.1

At each wind farm location, a list of competent technicians showing the responsibilities for which they are nominated should be produced. In order that a competent technician can carry out work or testing under a particular ROP, he/she must also be technically competent to perform that work or testing. In order that this can be demonstrated, the individual concerned should be nominated, in writing, as a competent technician.

The appointment of persons to undertake duties as competent technicians does not remove from them, or from any other persons, any responsibilities they may have for general supervisory or managerial duties.

With respect to contractor's staff:

It is the contractor's responsibility to make recommendations to Company 'A' of suitable persons for appointment as competent technicians, taking into account whether those individuals have sufficient technical knowledge and/or experience to be able to carry out the contract work or testing safely under ROPs.

The contractor should provide any information and any evidence of training, qualifications, skills and competency as might reasonably be requested by Company 'A'.

It is the responsibility of the appropriate manager of Company 'A' to assess and confirm the basis of any recommendations from the contractor to a standard deemed to be acceptable to Company 'A', (these standards should be stipulated in a Company 'A' MI).

Once satisfied that the request made by the contractor meets the Company 'A' standards, the appropriate Company 'A' manager should ensure that these recommended contractor's staff are made familiar with the relevant sections of the Wind Turbine Safety Rules and associated local procedures/MIs and make necessary arrangements for their formal appointment under the requirements of Wind Turbine Safety Rules Procedure P6.

GUIDANCE ON RULE C4.1.1

Once appointed, it is the responsibility of the competent technician to comply with the requirements of the Company 'A' Wind Turbine Safety Rules. However, Company 'A' and/or the wind farm asset owner should establish an adequate support process through normal management functions (e.g. work management/planning; TOC; instruction/supervision; monitoring/audit; refresher training).

GUIDANCE ON RULE C4.1.2

The competent technician must ensure that they and all other persons in the working party follow all of the Company 'A' requirements for general safety.

GUIDANCE ON RULE C4.1.3

Any ROP must only be used with the full knowledge and agreement of Company 'A'. It is the responsibility of Company 'A' to ensure that an AE has agreed that the operational work or testing concerned does not require an AWP. Equally, Company 'A' must be satisfied that it is happy for this work or testing to proceed as a ROP.

The point of concern here is that work or testing might be carried out under a ROP when it would be inappropriate to do so.

GUIDANCE ON RULE C4.1.4

Competent technicians must follow any safety instructions stated on the ROP.

GUIDANCE ON RULE C4.2

The process of obtaining TOC from the OC is pivotal in ensuring that Company 'A' and/or the wind farm asset owner can demonstrate that it exercises managerial control over its wind farm locations. Due to their potential complexity, the exact details of how the process of TOC is to be enacted should be detailed in MIs.

The exact meaning of the term 'TOC' will need to be discussed and explained in Company 'A' MIs.

Company 'A' in using the full rigours of the TOC process when using ROPs will have to incorporate a formal TOC (Release) and (Return) section.

Whatever requirements Company 'A' decides to impose on the use of ROPs it is strongly recommended that a formal documented record is made of the OC's agreement to work or testing under the ROP.

GUIDANCE ON RULE C4.2(i)

The competent technician must report his/her presence on site to the OC at the earliest possible opportunity. Company 'A' must ensure that adequate communication links are available between the OC and each wind farm location.

GUIDANCE ON RULE C4.2(ii)

Company 'A' must put in place a suitably robust system such that the OC can confirm that the ROP is valid. This process might be linked to a suitable work management/control system.

If the OC is not satisfied that the work or testing will be carried out under a valid ROP then they must withhold TOC and the work or testing must not take place.

GUIDANCE ON RULE C4.2(iii)

Once the ROP has been validated to a standard acceptable to Company 'A', the OC can give TOC to the agreed work or testing.

It is recommended that the details to be recorded at the time of TOC should be formal. However, the exact nature of what details and how the information is to be recorded, must be outlined in a Company 'A' MI.

GUIDANCE ON RULE C4.2(iv)

The competent technician must confirm that all work or testing detailed on the ROP is complete. All members of the working party must be informed of this fact by the competent technician.

The competent technician must inform the OC that work or testing is complete and of any restrictions or limitations to the operational condition of the WTG.

It is recommended that the details to be recorded at the time of completion should be formal. However, the exact nature of what details and how the information is to be recorded must be outlined in a Company 'A' MI.

GUIDANCE ON RULE C4.2(v)

In circumstances where the competent technician is to undertake several jobs on one WTG under several different ROPs, the OC might be requested to give TOC for all of the proposed operational work or testing. The Company 'A' requirements to record details of this transaction must then be carried out.

If TOC for work or testing under more than one ROP is agreed, then the competent technician must complete all of the work or testing under the first ROP before moving on to the next.

When work or testing under the last ROP is complete, then the competent technician must return the WTG to its normal operating condition. The competent technician must confirm to the OC that all work or testing detailed on the ROP is complete. The Company 'A' requirements to record details of this transaction must then be carried out.

GUIDANCE ON RULE C4.3

Company 'A' must ensure that sufficient importance is attached to the requirement to establish and maintain general safety. Company 'A' may wish to confirm that the requirements of Rule C4.3 are being met by implementing a formal system whereby a checklist is completed and signed by the competent technician. For example, a point of work risk assessment completed by the competent technician.

Competent technicians should have sufficient levels of competence to understand the requirements associated with establishing and maintaining general safety; this would normally result from their previous training and experience. Company 'A' should not nominate any person as a competent technician unless it is satisfied on this point.

Competent technicians have responsibilities under Rule C4.3 for establishing general safety requirements before putting themselves and/or their working party to work, including:

- Establishing that a safe means of access and egress is available.
- Ensuring that the place of work is safe for the work or testing to progress.
- Ensuring that the work area is controlled to ensure the working party and others are free from exposure to danger.
- Ensuring that appropriate tools and equipment are available.
- Ensuring that any necessary PPE is available.
- Ensuring that a safe method of work is available.
- Ensuring weather conditions do not add additional risk to the planned work or that weather may present a danger during the planned work. Weather forecasting and checks are recommended prior to work starting.

In the event that any requirements relating to general safety are deemed to be deficient by the competent technician, then he/she must have specific authority to either rectify the situation directly (e.g. to authorise the erection of a scaffold or other safe means of access), or to stop the work/testing from proceeding until the deficiencies have been rectified.

All aspects associated with general safety must be correctly implemented/used and maintained for the duration of the work or testing. In the event that circumstances change, then the competent technician must stop the work or testing until the deficiencies have been rectified.

GUIDANCE ON RULE C4.4

The competent technician must follow all of the requirements specified under the ROP to ensure that safety from the system is achieved.

Because the work or testing under a ROP is deemed to be of an operational routine and non-intrusive nature, these requirements will, by definition, usually be fairly straightforward. If complex precautions to achieve safety from the system are required, then it is almost certain that the work or testing is not of a routine operational nature and therefore an AWP would be required.

GUIDANCE ON RULE C4.5

It is a mandatory requirement for all operational work or testing under a ROP to be carried out by the competent technician in person, or under his/her personal supervision.

GUIDANCE ON RULE C4.6

During the course of the work or testing if any hazard arises that was unforeseen, the job must immediately cease. The competent technician must ensure that all persons are warned to stop work or testing and if necessary, removed from the immediate area. The competent technician must then ensure that the OC and the AE are immediately informed. The AE must then decide upon an appropriate course of action which avoids danger to persons.

GUIDANCE ON RULE C4.7

In essence, the competent technician is required to carry out the same checks that an AT would confirm in the clearance section of an AWP. See guidance under Rule B2.4.1.

Therefore, on completion of operational work or testing under a ROP it is the responsibility of the competent technician to ensure that:

All other persons in the working party have been withdrawn and are warned that the operational work or testing is complete and that it is no longer safe to continue work or testing on the plant/apparatus:

- all gear tools and loose equipment have been removed from the work area;
- all access doors are closed, and
- the WTG is in a safe condition to be returned to its normal operating condition.

Rule C4.2(iv) requires that the OC must be informed of the completion of work or testing that was carried out under a ROP.

C5 OPERATIONAL CONTROLLER

GUIDANCE ON RULE C5.1

See guidance under Rule C2.2.

Company 'A' should specify the identity, extent of responsibility and sphere of operation of each OC. Control boundaries for each wind farm should be clearly delineated.

Within the framework set out in the Rules, Company 'A' has the freedom to allocate OC responsibilities in a manner appropriate to local circumstances. For instance, it may nominate members of its own staff to be OCs for specified wind farm locations. Alternatively, some or all OC responsibilities could be vested in a single individual at any one time, such as a contract 'service provider'.

If required, MIs could give OCs authority to delegate some or all of the operational control functions for particular areas of the plant/LV apparatus to other persons (but those other persons must have been appointed by Company 'A' to act in the capacity as OCs). MIs should specify the detail of how and when it would be appropriate to delegate and the procedures to be adopted. This process would require the delegating OC to make a judgement as to whether it was appropriate to delegate the OC responsibilities based on the circumstances at the time.

Another possibility would be to nominate several persons to act as OCs to cover the whole of a wind farm portfolio, such that the persons would discharge their duties, either independently or jointly, as specified in a MI. Each person enacting the OC function in this way would need full knowledge of the actions of other OCs.

For any given wind farm location, a full record of the operational state of the plant/LV apparatus and the AWP in force should be available and there should be a procedure to record any consultation between OCs of adjacent spheres of operation. The requirements of how this is achieved should be specified by Company 'A' in a MI.

In deciding the manner in which to operate the OC function, consideration should be given to the experience of the staff involved and local preferences in respect of the consultation between the AT and the OC during TOC.

Before any work or testing can take place under the terms of an AWP, TOC must take place between an OC and the appropriate AT. Likewise, when work or testing under the terms of an AWP is finished, the AT must hand back operational control of the WTG to the OC. The AT will confirm that work or testing is complete and that the AWP is cleared and cancelled. In addition, the OC must be informed of any limitations or restrictions to the normal operating condition of the WTG. Company 'A' should specify in a MI how details of TOC are to be recorded, both before the work or testing starts and when it is completed.

Company 'A' should adopt a method for the OC to record TOC (and other details relating to the AWP, the work or testing etc.), that is suitable for its own particular circumstances. Possible means of satisfying this requirement might include the OC recording information in a log book, or on a separate register. A basic record would include the wind farm location, WTG number, AWP reference number, work/testing to be done and/or any work instruction reference number, date and time of the TOC and the names of the AT and the OC. Electronic or hard-copy records are both acceptable, but in either case, processes must be established that are sufficiently robust to ensure that records are retained for the purposes of maintaining an audit trail (see also Wind Turbine Safety Rules Support Procedure P8).

GUIDANCE ON RULE C5.2

See guidance under Rule C4.2.

Where appropriate, the guidance given under Rule C5.1 will also apply. For example, an OC might enact TOC under Rule C5.1 and delegate those duties to an OC based at the wind farm location. This second OC may then give TOC to a competent technician for agreed routine operation and maintenance work or testing to be carried out under a ROP.

Irrespective of any local arrangements introduced by Company 'A', before any work or testing can take place under the terms of a ROP the OC must give TOC. Likewise, when work or testing under the terms of a ROP is finished the competent technician must inform the OC. The competent technician will confirm that work or testing is complete. In addition, the OC must be informed of any limitations or restrictions to the normal operating condition of the WTG. Company 'A' should specify in a MI how details of TOC are to be recorded, both before the work or testing starts and when it is completed.

C6 SELECTED PERSONS

GUIDANCE ON RULE C6.1

Company 'A' must ensure that any person being appointed as a selected person does in fact have the technical knowledge and competence required. It is strongly recommended that some form of technical assessment is carried out by Company 'A' prior to making any such appointment.

GUIDANCE ON RULE C6.2

The names of selected persons and the hazards and the wind farm locations for which they have been appointed to make recommendations should be made available to all ATs who may need to consult them under the terms of an AWP.

ADDENDUM C1

COMPANY 'A' WIND TURBINE SAFETY RULES

Guidance on Training and Assessment of Authorised and Nominated Persons

1 INTRODUCTION

Wind Turbine Safety Rules Support Procedure P6 'Procedure for Appointment of persons' incorporates the minimum theoretical and practical standards for the training of authorised and nominated persons.

The following gives guidance as to how these minimum standards may be achieved.

2 GUIDANCE

- 2.1 A schedule of training objectives specific to the proposed duties of the trainee should be developed from the minimum standards.
- 2.2 A formal programme of training should ensure that, for each training objective, the candidate is given instruction and appropriate practical training by a person who has sufficiently detailed knowledge and experience of the subject matter.
- 2.3 The candidate should receive instruction relevant to each model of WTG for which they are being appointed. For instance, when training a prospective AT in isolation techniques, it is important that the candidate learns to use all relevant isolating devices and becomes familiar with their practical application for the WTG model concerned. If a common methodology can be applied to several similar items of plant/LV apparatus or to similar WTG models, the training should, as a minimum, cover representative examples.
- 2.4 On completion of the training for each objective, a formal assessment of the candidate's competence should be made. This may be achieved by oral or written questioning, interactive media training, or, where appropriate, by practical tests. This objective should then be 'signed off' by the assessor, who must be competent to make the assessment (e.g. an AE and/or technical specialist), and by the trainee.
- 2.5 The training objective should record details of the training received, persons involved in the training, and persons involved in assessment. Persons responsible for making assessments should sign the record and endorse it with any relevant comments. Preferably, training and assessment would not be carried out by the same person.
- 2.6 One suitable means of incorporating these requirements into a training programme would be to create a series of checklists where entries could be made against each separate objective in respect of training and assessment. For the more extensive

training programmes, the training could be broken down into a series of modules, with a nominated trainer for each module. A suitable checklist format is included in this guidance.

- 2.7 Consideration should be given to providing the candidate with a mentor to assist in his/her progress through the training. This mentor can then be requested to 'sign off' the training programme and make a recommendation for progression to an interview.
- 2.8 Training for AEs and ATs should cover the requirements of the Wind Turbine Safety Rules in detail, and aim to promote an understanding of:
- (a) Isolation and other precautions which need to be applied to enable work or testing to be carried out safely on electrical and mechanical equipment.
 - (b) Procedures for maintaining the security of safety precautions applied, the formal granting of authority for work/testing to be carried out, and ensuring that safety standards are maintained when different working groups are involved in the same job.
 - (c) The responsibilities of all persons involved in the process.

Also included should be discussions of findings from Wind Turbine Safety Rules audits, common problem areas, analysis of sample AWP's and specific case studies.

The training should end with a questionnaire, to enable each candidate to assess the depth of his/her current knowledge of the content of the Rules.

- 2.9 Prior to attending an authorisation interview for appointment as AT or AE, the candidate should have completed a satisfactory 'mock' interview.

3 CONTINUING ASSESSMENT OF COMPETENCE

There is a requirement for the appropriate manager nominated to manage the application of the Rules within Company 'A' to ensure that all persons appointed under Wind Turbine Safety Rules Support Procedure P6 are assessed for continuing competence on a regular basis and that the results are formally recorded.

3.1 Authorised technicians and authorised engineers

ATs and AEs should be assessed annually to ensure their continued knowledge, understanding and competence in the practical application of the Wind Turbine Safety Rules, MIs and support documentation.

Interactive media assessment programmes may be used to provide an effective means of assessing procedural knowledge, and can be used to support line managers in confirming continued levels of competence.

The person's line manager should provide written confirmation of continuing competence in the practical application of the Rules and supporting procedures. The process of reassessment can be used to identify the requirements for refresher training.

4 REFRESHER TRAINING

Competent technicians, ATs, AEs, OCs and Selected persons should be provided with refresher training at periods to be determined by the appropriate Manager within Company 'A'. In accordance with Wind Turbine Safety Rules Support Procedure P6, all persons appointed under the Rules are required to attend refresher training. The object of this refresher training is to re-emphasise the importance of adhering to the provisions of the Rules, thereby ensuring that consistently high standards are maintained across Company 'A'.

The refresher training should cover the subject matter in greater depth through active participation, and will include sessions on audit findings and case studies to highlight weaknesses that can develop through poor custom and practice.

The training should end with a questionnaire, to enable each candidate to assess his/her own level of knowledge of the content of the Rules and provide evidence to the person's line manager of their continuing competence.

5 AUTHORISATION AND NOMINATION FORMS

Suggested layouts for authorisation and nomination forms are included in Wind Turbine Safety Rules Support Procedure P6. It should be noted that:

- (a) Although the examples of nomination certificates include more than one nomination (e.g. selected person, OC and competent technician), on the same form, Company 'A' can use separate forms if it finds this easier to manage.
- (b) Electronic records are acceptable, provided that:
 - security systems are in place to prevent unauthorised access, interference and/or abuse;
 - they are fully auditable, and
 - they are accessible for viewing by all relevant persons who may have justification for requiring to have sight of them

The following pages contain examples of:

1. A generic training programme matrix.
2. Typical contents of a training matrix for the electrical system of a wind turbine.

1 EXAMPLE OF GENERIC TRAINING MATRIX

COMPANY 'A' WIND TURBINE SAFETY RULES

WIND FARM LOCATION:

TRAINING PROGRAMME FOR AUTHORISATION/NOMINATION AS:

TRAINING OBJECTIVE NO:

TRAINEE DETAILS

NAME:

DESIGNATION:

Scope of training	Objective	Trainee details	Assessment	Comments
Area where theoretical/practical expertise is to be gained (which may include reference to legislation, Company 'A' MIs and procedures, local site-based systems and/or specific activities associated with work/testing on plant/apparatus)	Level of knowledge that has to be achieved or task where practical competence needs to be demonstrated	Confirmation that training has been carried out including all relevant details (e.g. name(s) of trainer(s), period of training, date of completion and signature to confirm completion)	Date of assessment, name and signature of assessor	Result of assessment and any relevant comments from the assessor

2 EXAMPLE TRAINING MATRIX FOR A WIND TURBINE ELECTRICAL SYSTEM:

Low Voltage Electrical System for Wind Turbine Manufacturer/Model:

CRITERIA FOR ASSESSMENT	EVIDENCE REFERENCE	ASSESSOR	DATE
<p>List relevant training course(s) attended.</p> <p><i>Include for example:</i></p> <ul style="list-style-type: none"> – Wind Turbine Safety Rules training course – Electrical Awareness training course – Wind Turbine Manufacturers training course 	<p>For example:</p> <p>Attendance record(s)/course assessment</p>		
<p>Demonstrate understanding of Wind Turbine Safety Rules and Legislative requirements.</p> <p><i>Include criteria, for example:</i></p> <ul style="list-style-type: none"> – Principles of Rule A3 – Electricity at Work Regulations – Understanding of principles associated with Live work/testing 	<p>For example:</p> <p>Course assessment/questioning</p>		
<p>Demonstration of the correct operation of the following LV switchgear types for isolation purposes.</p> <p><i>Include the range of LV switchgear specific to the wind farm location, for example:</i></p> <ul style="list-style-type: none"> – LV circuit breaker/isolator(s) – Others (e.g. miniature circuit breakers; fuses; links) – Requirements for PPE <p>Demonstration of an understanding of the Wind Turbine LV electrical layout and interconnection, including circuit breakers, isolators, miniature circuit breakers, fuses etc</p> <p><i>Include criteria as appropriate, for example:</i></p> <ul style="list-style-type: none"> – Single line diagrams and general description of the systems – Control and protection systems – Normal and abnormal operating conditions – emergency switching. – Arrangements for electrical/mechanical interlocks – Interface with HV systems/system boundaries (HV to LV) 	<p>For example:</p> <p>Reference to completion of training exercises</p> <p>For example:</p> <p>Reference to completion of training exercises</p>		

<p>Demonstration of the correct use of the approved voltage detection instruments</p> <p><i>Include criteria, for example:</i></p> <ul style="list-style-type: none"> - Correct use of test Instruments and proving Unit - Principle of Prove – Test – Prove - Knowledge of when to test to ensure LV apparatus is not live 	<p>For example:</p> <p>Reference to completion of training exercises</p>		
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ANNEX A

PRINCIPLES FOR ADOPTION OF THE SAFETY ON WIND TURBINE SAFETY RULES

The intent of this annex is to ensure that the same standard of safety is achieved by each company adopting the Wind Turbine Safety Rules, whilst allowing each company some flexibility to incorporate and implement the Wind Turbine Safety Rules within their respective company structure.

DOCUMENTATION TO BE ADOPTED

In order for Company 'A' to adopt the Safety On Wind Turbine Safety Rules, it shall adopt the following suites of documentation:

Wind Turbine Safety Rules – consisting of the Foreword, Defined Terms, Policy, Philosophy and Principles, General Provisions, Basic Safety Rules Parts A, B, C & D.

Support Procedures – minimum standards on how to apply the Wind Turbine Safety Rules.

Wind Turbine Safety Rules Guidance – guidance to assist a company in understanding the intent and reason for certain aspects of the Wind Turbine Safety Rules.

STANDARDS FOR ADOPTION

Wind Turbine Safety Rules

The Wind Turbine Safety Rules should be considered as sacrosanct and shall not be subject to change by Company 'A' with the exception of the following points:

1. The changing of references from Company 'A' to the name of the company adopting the Safety Rules within the Safety Rules.
2. The wording in the policy can be added to in order to reflect any requirements of Company 'A'.

Support Procedures

The support procedures define an acceptable minimum standard to achieve various requirements under the WTSR and as such, the detail contained within should be as a minimum reflected in the MIs of the company adopting the safety rules.

It is acceptable for Company 'A' to change the roles identified within the support procedures for those that exist within their company structure and add further company-specific requirements to those specified in the support procedures. Support procedures shall be used to develop company-specific MIs.

WTSR Guidance

The Wind Turbine Safety Rules guidance has been developed to provide further detail and guidance on aspects of the Wind Turbine Safety Rules so that an adopting company can implement them with greater ease.

The Wind Turbine Safety Rules guidance shall be adopted by the company adopting the Wind Turbine Safety Rules.

The company adopting the Wind Turbine Safety Rules can elect to deviate from the standard guidance but in doing so, shall be clear where deviations from the industry standard Wind Turbine Safety Rules exist and what controls are in place to manage these changes.

This could be identified in the adopted Wind Turbine Safety Rules guidance, an implementation MI or some other company-specific document.

It is expected that when the adopting the Wind Turbine Safety Rules guidance, the adopting company will replace references to Company 'A' with the relevant company name.

It is expected that the policy will be identical to the policy detailed in the Wind Turbine Safety Rules adoption.

Note: Deviations from the standard guidance for the benefit of the company could lead to inefficiencies in working relationships with other Wind Turbine Safety Rules users. It is the responsibility of the adopting company to accept and manage this risk.

OTHER DOCUMENTATION

Management Instructions

In addition, the Wind Turbine Safety Rules, guidance and support procedures identify that MIs shall be created and maintained by the company adopting the Wind Turbine Safety Rules to define how specific aspects of safety rules implementation that are not already covered in the documentation previously identified, will be managed.

ANNEX B

RESTORATION OF ELECTRICAL SUPPLIES FOR WORK OR TESTING DURING THE AWP WORKFLOW

The intent of this annex is to recognise the fact that currently the Wind Turbine Safety Rules, Rule A2.4, only allow ROMP for mechanical work or testing. There is no process in the rules to specifically allow restoration of electrical supplies for testing purposes which is required when maintaining a wind turbine. This process is required within a workflow for phase rotation testing, fault-finding, supply testing, etc.

The WTSR Rule A2.4 only allows for the ROMP during work or testing for 'mechanical plant'; however, there is frequently a need to restore electrical supplies for testing or fault-finding during the work. This document establishes the procedure to be followed when testing on electrical supplies is required during the course of a work package.

Scope;

This procedure allows the use of the WTSR recognised ROMP process to be utilised, for the 'restoration of electrical supplies' during a work package, for testing and/or fault-finding to ensure there is a continuation of a safe system of work and safety from the system can still be maintained.

Procedure & Actions;

When electrical supplies require restoration to allow circuits to be tested and additional fault finding to be carried out, the process of removal and replacement of points of electrical isolation shall follow the ROMP process used for mechanical work or testing. Restoration of electrical supplies for testing and/or fault-finding shall be part of the workflow.

The AE who approves the AWP which requires the restoration of electrical supplies shall:

1. Ensure personal supervision during the work or testing which allows for the ROMP supplies and being responsible for all matters of safety concerned with such work or testing.
2. Give instructions for the removal and reapplication of those safety precautions, as stated on the AWP, which may be disturbed during the course of the work or testing whilst at the same time maintaining safety from the system.
3. Implement procedures to ensure that safety from the system, and safety from any test equipment, is maintained as dictated by the test programme.

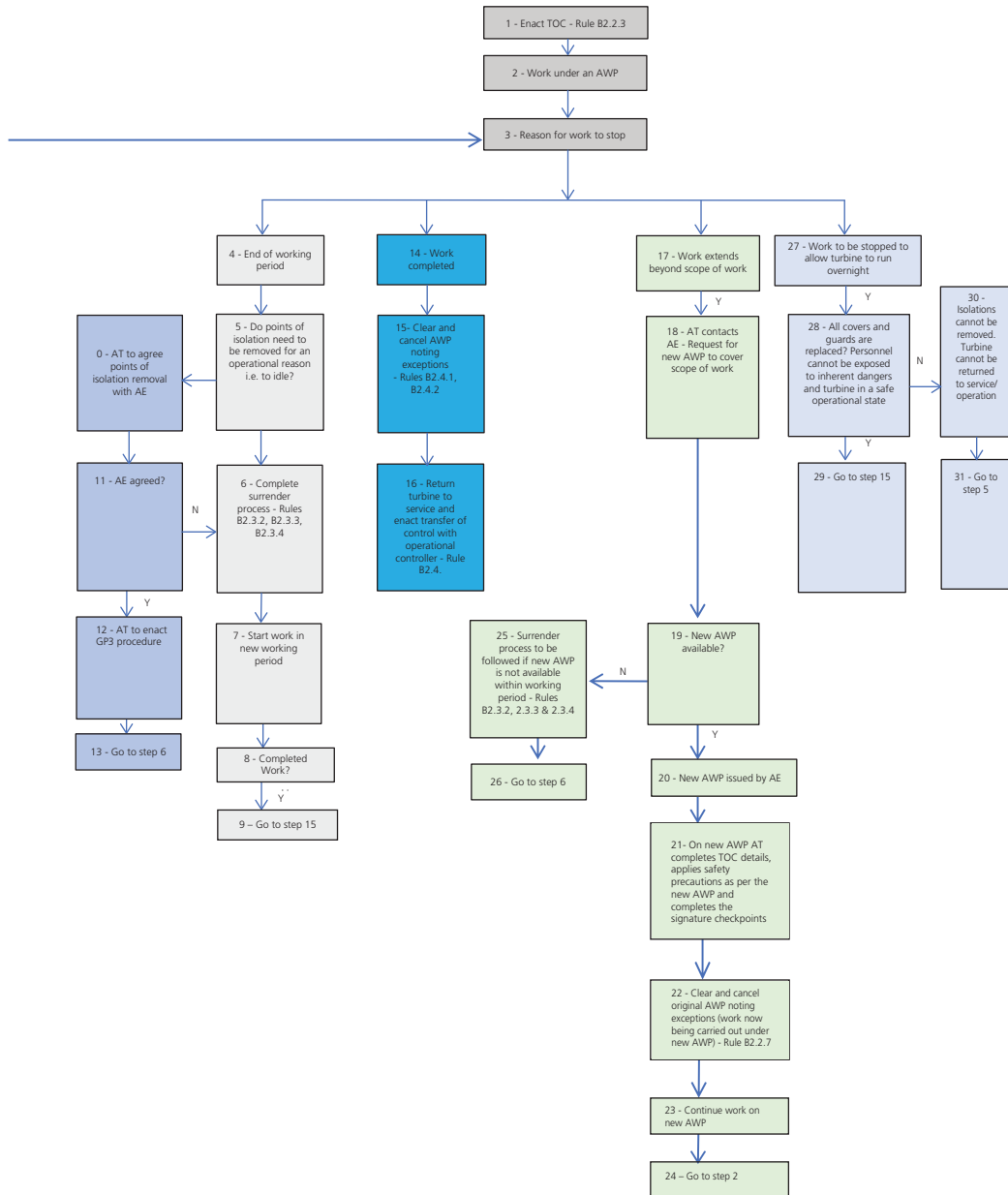
Note: The following three conditions are stipulated in the Electricity at Work Regulations 1989 (Reg. 14) and must be met before live working is permitted. Live working is carried out under WTSR Rule A3.13:

- it is unreasonable in all the circumstances for it to be dead;
- it is reasonable in all the circumstances to be at work on or near it while it is live, and
- suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent injury.

Fig.1 Example for an AWP:

3	Restoration of supplies								
	The following supplies may be restored								
	For the following essential work or testing								
	Used			Yes/No		Sign			
	Remove								
	Replace								

ANNEX C TRANSFER FLOW CHART



ANNEX D

WIND TURBINE SAFETY RULES SUPPORT PROCEDURES AND MANAGEMENT INSTRUCTIONS

The following documents have been produced in support of the Wind Turbine Safety Rules. Company 'A' should take account of these procedures when implementing the Rules and in the production of their MIs.

No further guidance is given in relation to these supporting procedures.

- P1 Procedure for Approval of General Provisions (GP3) Special Instructions and Other Procedures.**
- P2 Procedure for Approval of Tools, Equipment and Processes.**
- P3 Procedure for Objections on Safety Reasons.**
- P4 Procedure for the Addition and Removal of Safety Rules to Plant and Apparatus**
- P5 Procedure for the Temporary Addition of Alternative Safe Systems of Work.**
- P6 Procedure for Appointment of Persons.**
- P7 Procedure for the Control and Management of Cross Boundary Safety Precautions Between the Wind turbine Safety Rules and Other Safety Rules.**
- P8 Procedure For Approval Of Electronic Safety Document Systems**

ANNEX E

ACRONYMS

Acronym	Definition
AE	authorising engineer
AT	authorised technician
AWP	approved written procedure
GP	general provision
H&S	health and safety
HV	high voltage
LV	low voltage
MI	management instruction
OC	operational controller
POI	point of isolation
PPE	personal protective equipment
ROMP	restoration of motive power
ROP	routine operating procedure
TOC	transfer of control
UPS	uninterruptable power supply
WTG	wind turbine generator
WTSR	wind turbine safety rules

MANAGEMENT INSTRUCTIONS

Throughout the Wind Turbine Safety Rules MIs are mentioned in the extracts. Each extract is linked to the section of the rules and the required MI.

MI) is defined in D19 as – 'A procedure for use at an individual wind farm location or series of wind farm locations, that documents the Health & Safety Management Systems of Company 'A' that are to be applied to meet specified requirements'.

Section	Extract	Required MI
2.3	2.3 A typical wind farm consists of two distinct systems – the high voltage (HV) infrastructure (parts of which may lie within the wind turbine structure but are not subject to these Rules), and the wind turbines with their associated plant and LV infrastructure, which are subject to these Rules. The boundary between these systems must be clearly defined in MIs for each site and will typically be located between the LV isolator(s) and the associated WTG transformer	MI for system boundaries
GP2	ADDITIONAL SAFETY RULES AND PROCEDURES In addition to the Wind Turbine Safety Rules, other associated Rules and procedures issued by Company 'A' (e.g. MIs, electrical & mechanical or distribution safety rules), or any other authorities and the requirements of supporting mandatory documents shall be complied with. Guidance documents should be complied with in accordance with MIs	MI for additional safety rules
GP4	OBJECTIONS ON SAFETY REASONS Any person receiving instructions in the application of these Rules shall report to the person issuing those instructions any objections on safety grounds to carrying them out. Any such objections shall then be dealt with in an approved manner, which is described in a MI for that wind farm location	MI for objection on safety reasons
A1.3	AWPs shall be reviewed and updated in line with MIs	MI for review of AWPs

A3.12 (v)	For ongoing work or testing, beyond one working day, secure retention of items taken into safe custody by the AT shall be in accordance with MIs	MI for safe custody in all circumstances
A3.12 (viii)	Where adjacent exposed live LV apparatus is present which gives rise to danger, work or testing must only be done by an AT who has completed an appropriate course of training as defined in MIs and is appointed for work or testing adjacent to exposed live LV apparatus	MI for levels of competence
A3.13	The work or testing shall only be done by an AT who has completed an appropriate course of training as defined in MIs and is appointed for work or testing on live LV apparatus Prior to the commencement of work or testing, any additional precautions specified by the selected person's report that are necessary to remove or prevent danger, shall be implemented in accordance with MIs	MI for levels of competence
A7.6	Work or testing on, or the making of adjustments to, the controlling features of wind turbine plant or LV apparatus while it is in the operating mode shall only be done by an AT who has completed an appropriate course of training as defined in MIs, and is appointed for that purpose	MI for levels of competence
A9.1	When work or testing at wind farm locations requires access to a confined space in which, by virtue of its enclosed nature, there arises a reasonably foreseeable specified risk (as defined in the Confined Spaces Regulations 1997), then guidance on the precautions to be taken shall be defined in a MI	MI for confined space
B1.2	The Rules concern themselves with the principles of achieving safety from the inherent dangers of plant and LV apparatus. The detailed manner in which the objectives, responsibilities and requirements of Part B of the Rules are to be met shall be subject to MIs	MI for how to achieve safety from the system

B2.1.2	The AWP shall identify all foreseeable circumstances when a selected person's report is required in order to identify any additional precautions to remove or prevent danger. MIs shall specify how the requirements of the selected person's report, including any additional precautions, will be implemented before the work or testing is allowed to proceed	MI for selected person's report
B2.2.2	Before work or testing can take place, the AT shall be issued with a copy of the AWP in accordance with MIs	MI for how AWP's will be issued to an AT
B2.2.8	Where a selected person's report identifies any additional precautions required to be taken during the course of work or testing, to avoid system derived hazards, then these requirements shall be followed by the AT. MIs shall specify how the requirements of the selected person's report, including any additional precautions, will be implemented before the work or testing is allowed to proceed	MI for selected person's report
B2.3.2	The AWP, together with any associated documents, keys and appropriate items, shall be retained in safe custody during periods when no work or testing is taking place. MIs shall specify the procedures to be followed in order to achieve safe custody. Before being placed in safe custody, Part 1 of the surrender record shall be completed by the AT	MI for safe custody in all circumstances
B2.3.5	If for any reason it is found necessary to temporarily discontinue work or testing, then this shall be indicated in the AWP and those reasons shall be recorded by the AT. This process shall be described in a MI. The requirements of Rules B2.3.2, B2.3.3 and B2.3.4 shall be followed as appropriate	MI for surrendering an AWP
B2.4.1 (v)	Note and report any exception to the OC and AE in accordance with a MI	MI for how exceptions are communicated and recorded
B2.4.4	The completed AWP, together with any selected person's report and other associated documents, shall be retained in accordance with MIs	MI for storage of AWP and other documents

B3.2	An AE shall agree that the operational work or testing can be carried out without an AWP by following a ROP. The nature of this agreement shall be confirmed in a MI.	MI for approval and use of ROPs
B3.3	The form of any ROP shall be determined by Company 'A' and detailed in a MI	MI for approval and use of ROPs
B4.1	Each wind farm shall have MIs describing the procedure to be followed in the event of the loss of a safety key, loss of an active AWP and absence of an AT in receipt of an AWP	MI for loss of AWP. safety keys and absence of an AT
C2.1.3 (i)	Understand the contents and any subsequent actions arising from those contents. This shall also apply to any requirement to implement additional precautions from a selected person's report in line with MIs	MI for selected person's report
C2.1.3(ii)	During the course of the work or testing, adhere to, and instruct others under their charge to adhere to, any conditions, instructions or limits specified in the AWP. This shall also apply to any requirement to implement additional precautions from a selected person's report in line with MIs	MI for the duties of an AT implementing the requirements of an AWP and leading a working party
C2.2(iii)	On confirmation of a valid AWP, the AT shall request TOC, i.e. that the wind turbine(s) be released into his/her operational control. The AT shall then become responsible for the operational state of the wind turbine(s). The TOC process will be recorded by both parties in accordance with MIs	MI for the TOC process
C2.2(v)	The AT shall then inform the OC of the completion of the work or testing, together with any limitations/ restrictions on the plant/LV apparatus and any changes to the operational condition of the system concerned. The TOC process shall then be carried out for the operational state of the wind turbine(s) to be returned to the OC. The TOC process will be recorded by both parties in accordance with management instructions	MI for the TOC process

C2.3	Following TOC, the AT is then responsible for the release of plant/ LV apparatus for work or testing in line with procedures that shall be specified in MIs. These procedures shall include the process of:	MI for the duties of an AT implementing the requirements of an AWP and leading a working party
C2.4(i)	Retaining the AWP and associated documents and keys in safe custody, and correctly implementing the requirements of any MI to achieve this	MI for the duties of an AT implementing the requirements of an AWP and leading a working party
C2.5(i)	All persons working under the AWP have been withdrawn from, and warned not to continue with, work or testing on the plant and LV apparatus concerned. All associated documents, keys and other items are accounted for and then completing Part 1 of the surrender record before placing it in safe custody in line with MIs	MI for the duties of an AT implementing the requirements of an AWP and leading a working party
C3.2.1(ii)	It states all the foreseeable circumstances when it is necessary to call upon a selected person to provide a report specifying any additional precautions to be taken to remove or prevent danger, which shall then be implemented in accordance with MIs	MI for the duties of an AT implementing the requirements of an AWP and leading a working party
C3.2	An AE shall agree to operational work or testing that can be carried out without an AWP by following a ROP. The nature of this agreement shall be confirmed in a MI	MI for approval and use of ROPs
C4.2(iii)	On confirmation of a valid ROP, the competent technician shall request TOC from the OC that the agreed operational work or testing be allowed to continue. This TOC from the OC shall be recorded in accordance with MIs	MI for the TOC process

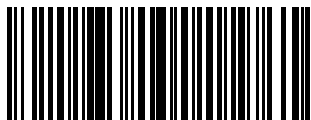
C4.2(iv)	When the operational work or testing described in the ROP is completed, the competent technician shall warn all other persons to withdraw from, and not to return to, the work area. The competent technician shall then inform the OC that the agreed work or testing is complete and advise of any changes to the operational condition of the system concerned. The completion of the operational work or testing described in the ROP shall be recorded in accordance with MIs.	MI for the TOC process
D21(ii)	AT - a competent technician who has sufficient technical knowledge and/or experience to enable him/her to avoid danger and who has been appointed by an appropriate officer of Company 'A' to be responsible for: <ul style="list-style-type: none">- Enacting the process of TOC, in circumstances defined in these safety Rules and/or MIs	MI for the duties of an AT implementing the requirements of an AWP and leading a working party



Energy Institute
61 New Cavendish Street
London W1G 7AR, UK

t: +44 (0) 20 7467 7100
e: pubs@energyinst.org
www.energyinst.org

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