

Operational procedure

Work permits at RGB

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0 Reference

Document number	Title
	Group Health and Safety Rule – GR05 – Permit to work system

This document replaces the following documents:

Document number	Title
ZST.10010043604.000_00	OP – Work permits at RGB

1 Introduction

This document describes the rules to be followed at Electrabel while preparing and executing work at Renewable Generation Belux (RGB). These rules are applicable for all installations, managed by the department RGB.

At RGB, the preventive, predictive and corrective maintenance and all exceptional works are generally entrusted to a contractor which will execute the works with his own employees and/or subcontractors on the installations managed by RGB. The installations managed by RGB aren't permanently manned, nor by Electrabel, nor by a contractor.

The purpose of a Permit to Work (PTW) system is to guarantee, through technical and organizational measures, the control of the health and safety risks related to the interactions between Works, Installations and their environment.

It enables the following:

- to guarantee that the Installation Manager is informed at all times of the Works ongoing and the configuration of the Installation, in order to be able to coordinate successfully,
- to perform an analysis of the risks – before conducting Works – primarily to the health and safety of internal or external employees and third parties, and secondly to the environment and the integrity of the Installation,
- to issue a Permit to work (PTW) specifying the risk controls to be implemented,
- to communicate clearly to the employees in charge of the Work: the exact nature and scope of the work, as well as the risks of interaction with the Installation and its environment,
- after the work is completed, to ensure that all concerned parts of the Installation are restored in the safety condition required by the PTW, and reinstated.

By default, any work within the installations requires a PTW.

If necessary, the management must draft a list of any work or area that are not subject to the PTW system and justify its choices based on a formal risk assessment. This allows to impose automatically a PTW in ambiguous situations or if installations are modified or extended.

These works or areas are part of a "list with works not subjected to the PTW system (Support Document).

Certain repetitive operation activities may be authorised via a procedure rather than a PTW. In this case, the procedure in question must guarantee a level of risk control that is at least equal to that

provided by the issuing of a PTW. The risk assessment for each procedure must be formalised and reviewed when needed.

2 Roles, responsibilities and competences

If RGB or GDF Suez is owner or the concession holder of an installation, the PTW system will be part of her responsibilities.

In the case when the Entity has subcontracted totally or partially the operation of the Installation (including to another Group Entity or for specific Works), it must formally:

- require the implementation of a PTW system that is at least equivalent to that defined in this Rule;
- control the PTW system in compliance with paragraph 3.3.3.

If the Entity performs a Work in an Installation controlled by a customer, it must ensure contractually that the customer implements a PTW system guaranteeing a level of safety at least equal to that aimed at in this Rule. If it is not the case, the Entity will suggest to the customer to apply during the Work the requirements defined in the present Rule.

The addition of new roles or the accumulation of certain roles is permitted, based on the structure of the company, the Installations, the nature of the Work in question, or on the applicable regulations, provided that the requirements of this Rule are met. In case of accumulation of roles, due to the potential risks, the Entities must specify and recall the responsibilities to all nominated persons.

2.1 Definitions

2.1.1 Installation

Any equipment, asset, pipelines, machines, building, area within a site, premises or a distribution or transmission system.

2.1.2 Work

Any activity undertaken by the Entity, its subcontractors or third parties in the Installation or its environment, including operation, maintenance, tests, construction.

2.1.3 Permit to work (PTW)

The term "Permit to Work" (or "Permit") refers to the form that officialises the authorization granted by the Installation Manager (or someone designated by him) to certain individuals to undertake a Work at a given time and in a given place, provided they observe the preventive and protective measures formerly defined.

The Permit to Work system may involve other forms covering specific risks (e.g. hot works permit, lock-out tag-out certificate, test permit, confined space permit, excavation permit).

2.1.4 Lock

Physical locking device (e.g. padlocks) to be installed on an isolation device following a set procedure, in order to avoid it being operated either unintentionally or voluntarily.

2.1.5 Tag (labelling)

A label to be placed on an isolation device, relating to a PTW, which states that operation of the device is forbidden.

2.2 Roles and responsibilities

2.2.1 The Installation Manager

Individual in charge of operating an Installation or part of an Installation. He is appointed by the operation manager when there is one.

He must know the configuration of all the Installations involved and of any Work underway, at all times. He authorizes all Works to be undertaken.

2.2.2 Permit issuer

He is in charge of issuing the PTW after having verified that measures have been taken to secure the Installation and the environment.

2.2.3 Permit acceptor

They are in charge of receiving the PTW, of acquainting himself with the stipulations therein, of communicating them to those responsible for undertaking the work, and of ensuring they are observed. They may also be in charge of implementing specific risk controls before the start of work.

3 Operating procedure

3.1 Training and skills

The various nominated persons involved in the PTW must have skills that are recognised and adapted to their work, concerning:

- legal and regulatory requirements;
- the risks and technical domain of the Installation;
- the risk controls specific to the Works undertaken;
- the practical implementation of the controls in the securing phase;
- the application of the PTW system, especially:
 - the roles, responsibilities and requirements related to shift changeovers;
 - the use of the various forms;
 - the training requirements;
 - the measures to be taken in the event of an emergency.

3.2 Procedure to implement the PTW

The PTW procedure consists in 4 main phases:

3.2.1 Phase 1 – Preparation of the securing phase

The aim of the preparation of the securing phase is to define the risk control measures to implement in the securing phase of the PTW.

It involves 2 stages:

- risk assessment: it must be formalized via a precise description of the Work to be undertaken: Work phases, method statements and associated risks. It must take into account the risks entailed in coactivity and interference with Installations;
- drawing up risk control measures (e.g. isolation procedures, training, instructions, collective and personal protective equipments, monitoring of critical parameters or phases).

This phase ends with the approval by the Installation Manager.

3.2.2 Phase 2 – Securing phase

The **securing phase** aims at creating a secure working environment for the Work to be undertaken, via the implementation of the risk control measures drawn up during the preparation phase. It is carried out under the authority of the permit issuer.

In the case of a lock-out tag-out (LOTO) procedure to work without energy or fluids, the fundamental steps to apply are as follows:

- shutdown of the involved parts of the Installation, removal from service,
- separation (or isolation);
- lock-out: physical locking of the separation or isolation devices;
- tag-out of locked devices, including a clear statement that the device must not be operated;
- dissipation or suppression of the remaining hazardous energy or fluids;
- local identification of the equipment or part of Installation where the Work has to be performed;
- verification of the absence of energy or hazard;
- implementation of protective measures against return of energy or fluids;
- marking off of the work area.

Points of attention:

- the order and existence of certain steps may vary according to the nature of the LOTO;
- the permit acceptor can be authorised by the issuer to carry out certain steps;
- the devices to be operated must be clearly marked with a unique identification number. Maps, diagrams and markings must be up to date. If not, arrangements are taken during the preparation of the securing phase in order to avoid any risk due to identification errors;
- the PTW system must establish a clear relationship between the locked devices and the corresponding PTW (e.g. the PTW reference number may be written on the tags);
- any amendments to the lock-out procedure must be validated by the Installation Manager in order to avoid any mistakes during the reinstatement phase;
- the possible residual risks (e.g. working near live bare conductors, partial LOTO) must be identified and known to those involved, as well as controlled by suitable measures.

Once the securing phase is complete, the PTW relative to the Work undertaken is issued to the permit acceptor.

3.2.3 Phase 3 – Execution phase**3.2.3.1 Precautions to take before undertaking the work**

No Work may begin before the corresponding PTW has been issued. In addition, the persons in charge of performing the Work must have a work order issued by their manager.

Before undertaking the Work, the permit acceptor must ensure that all the conditions are in place for it to take place safely. In particular, he must make sure that the individuals in charge of carrying out the Work are both aware of and understand the following: the nature of the Work, the residual risks and those linked with coactivity, the precautionary measures, the emergency measures and the procedures for shift changeovers.

3.2.3.2 Stability of the organization, the environment of Works and the risk control measures

The stability of the organization, the environment of Works and the risk control measures must be verified all along the duration of the Work undertaken.

Particular attention must be paid to the following:

- changes in the schedule, substitutions within the foreseen staff, a reduced workforce, insufficient training, instructions that are not communicated, etc.,
- the state of the working environment (equipment in service while it is supposed to be removed from service, bad weather, simultaneous Works, etc.),
- changes which appeared during a Work interruption.

The parameters which could change with time (e.g. oxygen levels in a confined space, levels of H₂S or CO, etc.) are checked regularly and continuously. For this kind of check, the PTW must state the minimum frequency of checks and, if necessary, the logging of measurements.

3.2.3.3 Modification of initial conditions

The initial conditions requested for issuing the PTW may evolve due to:

- changes - whether foreseen or not - in the working conditions, including start of Work after an emergency or the addition of a Work which was not initially planned,
- the need to extend the scope of the Work or the period of validity of the PTW,
- the need to restore energy for process reasons or to perform the following step in the execution of the Work,
- the need to conduct tests.

In this case, a risk assessment must be formalised under the authority of the Installation Manager, so as to be able to draw up new risk control measures and issue a new PTW covering the modifications.

3.2.3.4 Period of validity of a PTW

According to the procedure in place in the Entity and the risk assessment, the permit issuer must set the period of validity of the PTW. If the Entity does not set periods of validity, it must organise periodic reviews of PTWs in progress to check they are still valid.

A formal procedure covering the transfer of information and responsibility must be implemented if there is a change in the PTW signatories during the period of validity.

3.2.4 Phase 4 – Completion of Work and return to the planned situation

The permit issuers must make sure, when the PTW is returned and before closing it, that they obtain a formal declaration from the permit acceptor stating that the Work is completed and that the working area is now free of any residual risk. In particular, it must state that the tools and work equipments have been removed and that the persons carrying out the Work have been warned that access to the working area is now forbidden, except if a new PTW is issued. In cases when the PTW must be returned while the Work is not completed or there remain residual risks, the Entity must apply the requirements of §3.2.3.3. This may be confirmed via a field inspection.

In the case when a LOTO procedure has been implemented, a reinstatement procedure is prepared and executed after closing the PTW. Depending on the nature of the Work, the possible changes or on the context of operations, this procedure is not necessarily the exact opposite of the LOTO procedure.

3.3 Specific situations

3.3.1 Emergency preparedness

The emergency situations are anticipated during the preparation of the securing phase.

In particular, the following procedures are prepared:

- procedures to stop the Work in case of an emergency or an evacuation,
- procedures to reinstate certain equipments in advance in case of an operation emergency.

All individuals (employees, subcontractors, etc.) who are potentially concerned by this procedure must be officially informed of this possibility and know their role, their availability restrictions and the set up emergency procedures.

3.3.2 Specific precautions related to human and organisational factors

The PTW system must be devised so as to compensate for risks of human errors and faults in the organization, namely:

- the absence of one of the nominated persons in the PTW system,
- the loss of a document: generally the PTW form that has been officially approved,
- the misuse or the loss of a locking key,
- equipments identification errors,
- communication errors, especially when communicating from a distance, in the case of a change of nominated person or team, or when several languages are involved.

3.3.3 Experience feedback and controls

Accidents, incidents, and hazardous situations related to faults in the PTW system must be recorded and investigated.

The following must be performed:

- regular inspections in the field to verify PTW procedures are properly implemented;
- an audit of the PTW system every 3 years, including an analysis of sampled PTW forms, field inspections and interviews with staff members (internal or external).
- at least one annual review of the PTW system, to ensure it is up to date with changes in regulations and organisation, with previous inspections, reviews and audit results, and with the lessons learned from accidents or incidents.

3.4 Work permit form

The PTW form will contain at least the following information:

- description of the Work to be undertaken,
- exact name of the place of work, the Installation or the equipment involved,
- dates, hours of issuance and completion,
- names and signatures, at least of the permit issuer and acceptor,
- detailed description of the risks and management measures to be taken (this may also be described in separate documents).

A template has been drafted in all 3 languages used in Belgium and in English.

In the case when the location of the Work is remote from the PTW issuance location (e.g. for distribution and transmission systems, or for remote installations), a formal procedure (e.g. using read back message or fax exchange) must enable the permit issuer and acceptor to record the different PTW phases without any risk of error when exchanging information.

4 Supporting documents

Document number	Title
ZST.10010421898.000	IN – Distribution of the roles in O&M Wind and Solar – work permit procedure
ZST.10010421873.000	IN – Exceptional work at RGB
ZNO.10010425431.000	HD – List with intervention not subjected to the work permit system
ZNO.10010425426.000	HD – Work permit Template

5 Reason for adaption

Version number	Reason for adaption	Changed pages
01	Translation to english.	Complete document