

Health and Safety Standard: Tagout of electrical power distribution systems with a voltage of ≥ 1 kv for performing de-energised work

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Version: **1**



The following text corresponds to a translation of the original document, NT.00055.GN-SP.ESS, Version 1, in order to facilitate an understanding of its content by all employees of Gas Natural Fenosa. In the event of any differences of interpretation arising from the translation, the content of the original Spanish version in force will prevail for all purposes.

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Health and Safety Standard: Tagout of electrical power distribution systems with a voltage of ≥ 1 kv for performing de-energised work

1. Purpose

The purpose of this Health and Safety Standard is to define the general process to be followed for tagging out electricity distribution installations with a nominal voltage of ≥ 1 kv (high voltage) for performing de-energised work.

2. Scope

It is applicable at electricity distribution utilities in which Gas Natural Fenosa holds a majority shareholding and at any other in which it holds operational responsibility.

It applies to de-energised work on installations with a nominal voltage of ≥ 1 kv (or in the vicinity thereof), whether owned by the group or there is shared ownership or it is owned by third parties when the group is responsible for the work or for the operation and maintenance of the installation, whether the work is performed urgently (emergencies or failures) or it is scheduled.

Likewise, it will apply to the group's own personnel, to the personnel of contractor companies and to the personnel of third parties whenever they may perform work that might involve the need to tag out installations owned by the group.

In any event, all applicable legislation in each territory and the aspects contemplated in this Health and Safety Standard must be complied with.

3. Reference documents

- Technical Standard NT.00034.GN-SP.ESS-PT.01. "Health and Safety Standard: Part 1: Control prior to beginning work."
- National Electrical Safety Code, C2- 2012, NESC, IEEE Standards Association.
- Royal Decree 614/2001 on the minimum provisions for protection of the health and safety of workers against electrical hazards (Spain).
- Technical Standard NT.00043.GN-SP.ESS. "Health and Safety Standard: Work Permits".
- IEEE Std 1048™-2003 "Guide for Protective Grounding of Power Lines".

4. Definitions

Authorised worker: a worker with sufficient training who is authorised by the operator to perform certain jobs with an electrical hazard, based on their ability to do so correctly according to procedures established in applicable regulations in force in the country. The Group could also require specific accreditation for such qualification.

Training must focus specifically on the job position or on the function of each worker, it must be adapted to the evolution of the hazards and to the appearance of new risks, and it must be repeated periodically, if necessary.

The training (theoretical and practical) required for an "authorised worker" must qualify the worker to correctly perform the work they are going to do, within the following minimum scope:

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- Electrical hazards and first aid.
- Use and upkeep of individual and collective protective equipment.
- The necessary operations and switching to leave installations de-energised.
- Jobs on electrical installations at sites where there is a risk of fire.

Danger zone or hot work zone: the space around live elements that are not protected, in which the presence of an unprotected worker represents a serious and imminent risk of an electric arc occurring or of direct contact occurring with a live element, thereby considering the normal gestures and movements that a worker could make while remaining stationary.

Installation in service: an installation that is live and is used for operation, and it might or might not be under load. An installation CANNOT be put into service without the express authorisation of the COR.

Installation out of service: one that has been disconnected from the power grid and is de-energised. In this state, the installation could be:

- **AVAILABLE:** the installation is available to the COR to put it back into service when required.
- **UNAVAILABLE:** the installation cannot become available without the pertinent authorisation from a person unrelated to the COR.
- **TAGGED OUT:** an unavailable installation, for which the ZD has been created.
- **PREPARED FOR DE-ENERGISED WORK:** a tagged out installation for which the ZT has been created.

An installation CANNOT be placed out of service without the express authorisation of the COR, barring cases of force majeure (accident, fire or other emergency), in which the unit that has placed the installation out of service will call the COR to provide all the necessary information.

Installation under a special operating scheme: the situation that an installation is in when, while in service, its normal operating state has been modified in order to perform hot work on the installation or work in the proximity thereof. It could receive other names (yellow card, etc.).

Isolation point: the location of an installation where the switching element that ensures effective disconnection of voltage and the necessary isolation between its ends is located.

Proximity zone: a delimited space around the danger zone, from which a worker could accidentally invade the danger zone. Wherever there may not be a physical barrier that guarantees protection against the electrical hazard, the distance from the live element to the outside limit of this zone will be that which is indicated in the table show below.

The limits of both zones will be established in general according to the following table, in any event considering the values established in applicable local regulations if they are more restrictive:

Limit distances of work zones

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U_n (kv)	D_{PEL} (Cm)	D_{PROX-1} (Cm)	D_{PROX-2} (Cm)
Less than or equal to 1	50	70	300
3	80	112	300
6		112	300
10		115	300
15	90	116	300
20	95	122	300
30	110	132	300
45	120	148	300
66	140	170	300
110	180	210	500
132	200	330	500
220	300	410	500
380	400	540	700

D_{PEL} = Distance to the outer limit of the danger zone.
 D_{PROX-1} = Distance to the outer limit of the proximity zone, when it is possible to accurately delimit the work zone and ensure that it is not exceeded while work is being performed.
 D_{PROX-2} = Distance to the outer limit of the proximity zone, when it is not possible to accurately delimit the work zone and ensure that it is not exceeded while work is being performed.

SGI / SDS: management systems for incidents and tagouts.

Special tagout: a tagout in which the definition and/or creation of the ZD and/or ZT presents special complexities or is especially unique from the point of view of safety of the work to be performed, which makes it necessary to have requirements in addition to those contemplated in a normal tagout. **Appendix 02** indicates these additional requirements, as well as a non-comprehensive list of the work and/or situations that give rise to a special tagout. It could receive other names, such as **special clearance**, etc.

Tagout Code: exclusive identification code for each tagout generated by SGI/SDS.

Tagout order: a document that contains the information of the tagout request approved by the COR, in addition to the tagout code and remarks made by the COR.

Tagout: the set of necessary actions for leaving an installation out of service and creating the ZD [*Tagout Zone*] and the ZT [*Work Zone*] in the installation. It could receive other names, such as **clearance**, etc.

Tagout Zone (ZD): part of an installation where the following operations have been performed:

- Disconnection of the voltage sources by means of disconnection devices located at the isolation points.
- Prevention of any possible re-connection by locking (if possible) and "Switching prohibited" signs on the open position of the disconnection devices.

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- Verification of the absence of voltage on each one of the conductors separated from the voltage sources and located downstream from the isolation point.
- Earthing and short-circuiting of those isolation points that have a fixed earthing system (meaning, earthing switches), including the locking device thereof and adequate signage.

A ZD cannot be considered a work zone, wherefore it is not prepared for work to be performed.

Qualified worker: an authorised worker (meaning, a worker who meets the requirements established for this classification) who has specialised knowledge about high-voltage electrical installations due to their accredited, professional or university training or due to their proven experience of two years or more. The Group could also require specific accreditation for such qualification.

In this latter case, the certificate that proves the worker's experience must indicate the specific type of installation(s) on which the worker performed their activities.

Moreover, if necessary, the worker must have knowledge about electrical jobs in zones with the presence of explosive atmospheres.

Voltage source or power supply: the known and identified part or element of an electrical installation whereby voltage or electric power could reach that installation in a situation of normal operation. Therefore, voltage sources that could act fortuitously on the installation, such as induced voltages, falling lines under power at line crossings or unexpected injections of voltage due to possible generation elements located at the receiving installations of consumers, are not considered power sources subject to the disconnection operation itself. Protection against these accidental voltage sources is entrusted to the earthing and short-circuiting system of the work zone.

Work zone (ZT): part of the installation where de-energised work is performed safely. The ZT will be located within the ZD, which will have been previously created. To create the ZT, the following operations are performed (in addition to those already performed to create the ZD):

- Verification of the absence of voltage on all conductors that penetrate the ZT.
- Earthing and short-circuiting, as close as possible to the working point and on both sides of that point, of all conductors that penetrate the ZT, including the locking thereof, if applicable, and the corresponding signage.
- Safety signage to delimit the ZT. If there are uninsulated elements of the installation in the proximity of the ZT that have to remain live, additional protection measures must be adopted if work is going to be performed within the proximity zone of the live element.

There could be several ZTs within the same ZD, and there could be several de-energised jobs within the same ZT.

The actions to create the ZD plus the actions to create the ZT constitute, as a whole, the so-called five golden rules to safely perform de-energised work within the ZT:

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- 1st. Disconnecting power sources.
- 2nd. Preventing any possible re-connection, through locking and signage.
- 3rd. Verifying the absence of voltage.
- 4th. Earthing and short-circuiting.
- 5th. Protecting against nearby live elements, if applicable, and posting safety signs to delimit the ZT.

5. Responsibilities

The roles and responsibilities of the units or persons involved in the tagout process are listed below:

Requester: the person who requests that a tagout be granted to perform de-energised work. The requester designates the Work Foreman (JT) and is responsible for the initial planning of the de-energised work, object of the tagout, therefore providing the necessary information to the applicant so that the latter can do the planning to create the ZD and the ZT.

Applicant: the person who receives the need to perform de-energised work from the requester. The applicant makes the tagout request and designates the Work Zone Agent (AZT). The applicant is responsible for the prior planning in order to create the ZD and the ZT using the information provided by the requester.

Unit responsible for analysing tagouts on the high-voltage power grid: the unit that is responsible for analysing tagout requests and for rejecting or approving them.

Power Grid Operations Centre (COR): the unit that operates the assigned electrical system. It is where the power grid operators are located, who are responsible for directing the switching performed in the field by the Local Operations Team (EOL/BOL) to create the ZD and for the handover thereof to the AZT.

Local Operations Team/Squad (EOL/BOL): a team of qualified workers located at the isolation points, which is responsible for executing, under the COR's orders, the necessary local switching and operations for creating and undoing the ZD. The personnel could be contracted (but not subcontracted) and will be composed of at least two persons.

Work Zone Agent (AZT): a qualified worker designated by the applicant, who receives the ZD from the COR and who is responsible for creating and undoing the ZT, therefore performing or directing and supervising on site all the necessary switching and operations for the creation thereof. This agent returns the installation to the COR upon completion of the work, once the ZT has been undone.

The personnel may be contracted, but not subcontracted.

Own work team of the AZT (EP): qualified worker or workers directed by the AZT and from the same company, who, under the AZT's orders, physically execute the necessary switching and operations for creating and undoing the ZT.

Contracted work team of the AZT (EC): it applies only in the case in which the personnel are of the AZT. A contracted team of qualified workers formed by a Team Foreman and the

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other members of the team who, under the on-site direction and supervision of the AZT, physically execute the necessary switching and operations for creating and undoing the ZT.

Work Foreman (JT): a qualified worker designated by the requester, who is present during the work (and designates a qualified substitute in the event that that Job Foreman has to temporarily leave, which must be recorded in the record of events during execution of the work), who directs the work by designation or delegation of the Work Foreman's superiors and who is responsible for the safety of the members of the Work Team. The JT receives the ZT from the AZT and verifies and accepts the AZT before work begins. Upon conclusion of the work, the JT informs the AZT so that the latter can proceed to undo the ZT. The personnel could be contracted, but not subcontracted.

Work team of the JT (ET): a worker or workers designated by the JT to physically execute the de-energised work, who are under the responsibility and direction of the JT. This team, before beginning the work, receives all the necessary information from the JT about the safety conditions under which the ZT has been established.

Third party: a person or company unrelated to the group who performs work on their own behalf, which is therefore not the responsibility of Gas Natural Fenosa.

Agent for Third Parties (APT): a qualified worker designated by the applicant in the event of work performed by third parties in the proximity of an installation of the group, the tagout of which is requested by the third party.

Two or more of the roles described in this section may be held by the same person, but if this were so, such person will perform each role independently. The roles of AZT and JT for special tagouts are an exception to this condition, for which the persons must be different.

Likewise, the persons who perform the various roles in a tagout must prove to the group that they have the necessary knowledge to perform the tasks, for which the necessary system of accreditations could be established.

Appendix 03 shows a matrix of the various responsibilities in the different phases of a tagout.

6. Development

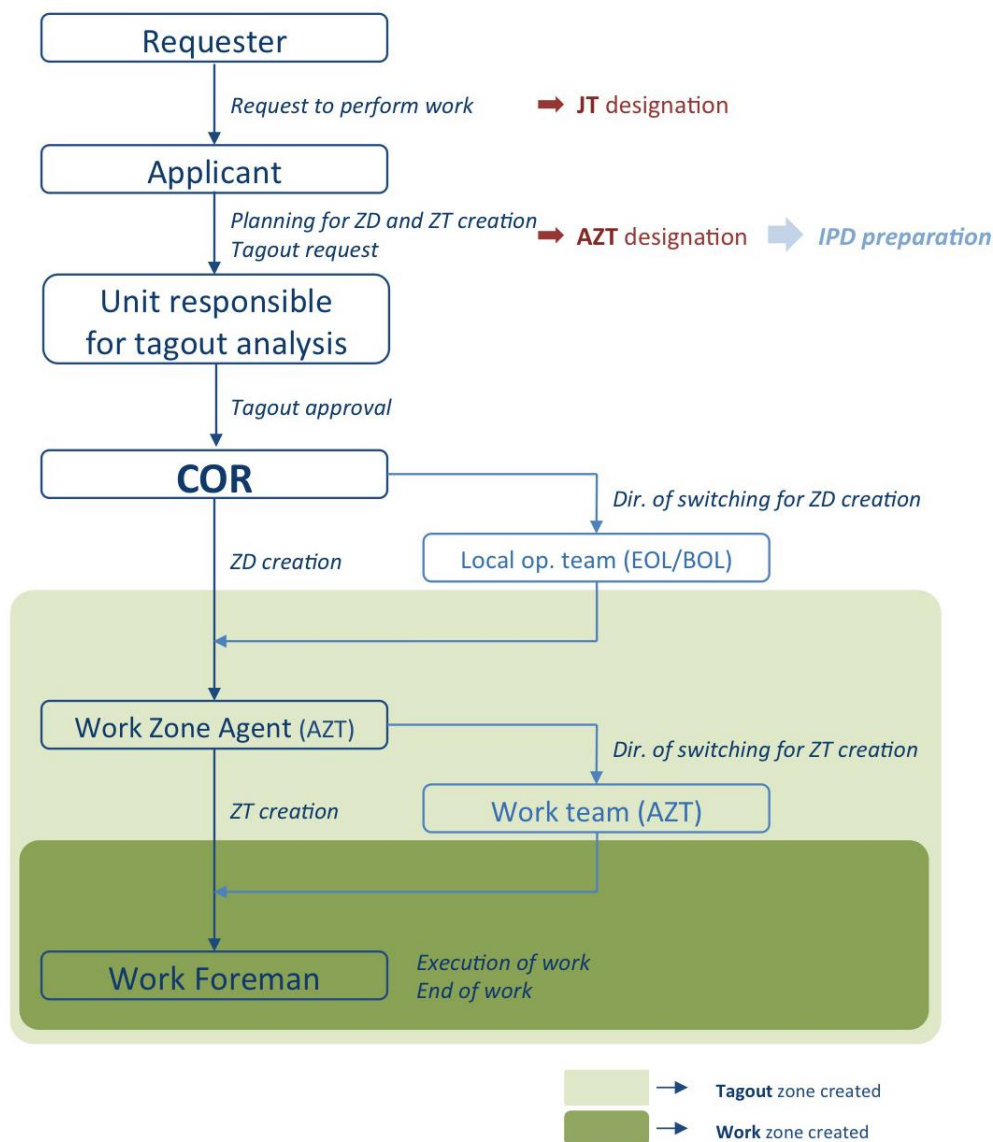
The criteria established in this document do not eliminate the obligations or requirements originating from mandatory local laws or standards or from the conditions of distribution concessions or authorisations of each particular country, wherefore the provisions set forth for this purpose in applicable local legislation must be respected.

All work in which the danger zone may be invaded or could be invaded will be performed under tagout conditions or, if the necessary means are available, as live work (hot work).

The basic diagram of a planned tagout process is shown below, including a description of the basic stages:

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6.1. Request to perform work

In the event of the need for a tagout, the **Requester** notifies the **Applicant** of the work to be performed and the initial planning of the same, thereby assessing the associated risks of execution and designating the **JT** who is responsible for executing the work.

The requester must provide the **JT** with all relevant information about this initial planning.

6.2. Planning for ZD and ZT creation

Before making the tagout request to the **Unit that is responsible for analysing tagouts**, the **Applicant** must correctly plan the work associated with the creation of the ZD and the ZT, thereby considering safety.

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The objective of this planning is the following:

- Establishing the correct definition of the ZD and the ZT, as well as the adequate measures to be taken to guarantee that said zones protect the workers who are going to perform the de-energised work against electrical hazards.
- Analysing the risks associated with actual creation of the ZD and the ZT.

For the case of tagouts that may be defined as special in the particular procedures of each country, it is mandatory to make a field visit for planning a tagout.

6.2.1. Prior planning conducted at the office

Based on the initial planning notified by the Requester, the **Applicant** will perform the following tasks during planning at the office (in order to identify the installations and define whether or not a tagout or the special scheme is necessary at the installations, the applicant must have all the necessary and pertinent documentation at the office):

· *Definition of the ZD*

The **Applicant** will unequivocally identify, using the installation database code (BDI), the isolation points of the voltage sources that are necessary to create the ZD, as well as the earthing switches that must be switched (if there are any). The Applicant will make this identification for all installations affected by the tagout.

Definition of the ZT

The **Applicant** will unequivocally identify the locations of the earthing connections for creating the ZT (including those that coincide with the earthing connections of the ZD), as well as the sequence for installing them.

In the event that it is possible for the danger zone of the installation, object of the work, to be invaded by other live elements, the tagout of those elements must be requested, and the **Applicant** must also define the ZD and ZT thereof. The latter is formed by the necessary earthing connections of such installations, located on the conductors that enter the proximity zone of the installation on which the de-energised work will be performed (for example, the actual crossing span at a crossing of overhead lines).

Analysis of risk points while work is being performed

The **Applicant**, once the affected installations have been initially identified, must conduct a study of the following risk points:

- Work in the proximity of other, non-isolated live elements.
- Simultaneous and/or related work.
- Other aspects that could affect the safety of the work.

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6.2.2. Field visit for tagout planning

Whenever the objective of the planning cannot be completely guaranteed without going to the field, the corresponding visit to the installations must be made. This visit will be mandatory for special tagouts.

During the visit, the **Applicant** will analyse, on site, the risks associated with the necessary work for actually creating the ZD and the ZT in order to plan the necessary preventive measures.

Regardless of whether or not a field visit has been made, the **Applicant** must draft a Tagout Planning Report (IPD) that includes the results of the planning and the designation of the **AZT (Appendix 04)**.

This report must unequivocally identify the mentioned elements of the power grid (installations, switching points, etc.) using their BDI code.

This report will be delivered to the **AZT** and will be available to all other roles involved in the process.

6.3. Tagout request

The **Applicant** will enter the tagout request in the corresponding system, including the information, instructions and advance notice deadlines established in management procedures for HV work particular to each country. This request must provide the basic information contained in the IPD.

Likewise, the Applicant will make the request for tagouts and for special schemes (or will ensure that the request is made) for any additional installations indicated in the request.

6.4. Approval or rejection of a tagout request

Once a tagout request has been received, the **Unit responsible for tagout analysis** will check that it has all the necessary information (the unit will send back the request if it is incomplete). The Unit will evaluate the viability of the request and will reject or approve it according to the provisions set forth in the procedure, "Management of work that affects the high-voltage power grid".

6.5. Creation of the tagout zone

After authorisation of the tagout and prior to the execution thereof (as long as the power grid conditions or other factors allow), the **COR** will be responsible for creating and undoing the ZD. It will therefore order the **EOL/BOL** to execute the necessary operations and switching.

All the necessary information for the **COR** will be updated in real time in the SCADA/DMS/OMS systems, available to all personnel of the COR.

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Before the switching to create the ZD begins, the COR will, in the system, identify the installation that is the object of the requested tagout, in addition to the isolation points to be switched and the earthing switches associated with those points (if available).

The sequence of operations and switching to be performed in order to create the ZD is the following:

- Disconnection of the voltage sources by means of disconnection devices located at the isolation points. In the event that the disconnection is not visible, effective disconnection will be verified by signalling the position indicator of the disconnection element.
- Prevention of any possible re-connection by locking (if possible) and "Switching prohibited" signs on the open position of the disconnection devices.
- Verification of the absence of voltage on each one of the conductors separated from the voltage sources and located downstream from the isolation point.
- Earthing and short-circuiting by closing the earthing switch at those isolation points that have such a fixed earthing system, therefore locking (if possible) and signalling the corresponding earthing connection.

If the installation does not have a fixed earthing system, it will not be necessary to install portable earthing devices to create the ZD.

In the case of cables, if there is no earthing and short-circuiting system at any of the centres located at the end points thereof, portable earthing devices that make up for this lack will be installed, thereby providing the equivalent level of protection.

The earthing connections of the ZD are the responsibility of the **COR**, and therefore they may only be removed by the **COR**. Earthing will be performed immediately after verifying the absence of voltage.

6.6. Creation of the work zone

The **AZT** is responsible for creating the ZT correctly, either on his own or using his work team (EP/EC), or using the **JT** and his team (which will therefore perform the role of the EC). In any event, the **AZT** will direct and supervise, on site, the necessary actions for creating said zone.

In the event that there are various ZDs within the same installation, each one will have their own **AZT**, which will create the work zone or zones that are necessary in each ZD.

Exceptionally, on lines with a voltage of equal to or greater than 33 kv that have a distribution or transmission function (link between substations or power supplies to customers), and if it is necessary to work in two or more ZTs that are apart from each other (whose management by the same AZT represented an excessive increase in the tagout time), the creation of several ZTs could be requested, delimited by the same isolation points in the installation itself. Said request must be authorised by the party responsible for technical management of the system.

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There may be no **AZT** changes during the creation of the ZT.

While work is being performed, both the **AZT** and the **JT** must be reachable by the **COR**.

The **AZT** and the **JT** will leave record of the actions described in this section, therefore filling out the forms established in the format corresponding to "Tagouts. Creation and handover of the work zone" (**Appendix 05**).

6.6.1. Handover of the tagout zone from the COR to the Work Zone Agent

The **COR** and the **AZT** will contact each other for handover of the ZD, wherefore the agents will proceed to identify themselves and will proceed with the oral communication sequence indicated in the technical instruction itself, which must be based on the following:

- The **COR** will ask the **AZT** if all the prerequisites prior to beginning the work have been complied with.
- The **COR** will inform the **AZT** of the elements that have been switched to isolate the voltage sources and of the locations of the earthing connections made in the ZD (if there were any).
- The **AZT** must verify and confirm that the ZD indicated by the **COR** matches the ZD shown in the approved tagout request. If it were not, all actions will be stopped until there is clarification by both parties and by the **Applicant**.
- If there were special schemes, the **AZT** will request confirmation from the **COR** that such special schemes have been implemented, in addition to all other tagouts indicated in the tagout request.
- The **COR** will hand over the ZD to the **AZT** and will inform the AZT that the ZT can be created.
 - Verification of the absence of voltage on all conductors that penetrate the ZT.
 - Earthing and short-circuiting at each end of the conductors that penetrate the ZT, including the locking thereof (if possible) and the corresponding signage. If the earthing connections of the ZT coincide with those of the ZD, the AZT must check, lock (if possible) and signal the installation thereof.
 - Delimitation and signalling of the ZT.

In the event that the earthing and short-circuit connections of the ZD (if they could be installed) and of the ZT are the same and they are going to be installed by the same person (exercising different roles), the redundant verification thereof will not be necessary, and the various padlocks or other locking elements can be installed simultaneously.

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- The **COR** will request, once the creation of the **ZT** has been completed and once all records have been filled out by the **AZT** and the **JT**, that the **AZT** call the **COR** to confirm this fact.

6.6.2. Creation of the work zone by the Work Zone Agent

The **AZT** will inform the team that is going to create the ZT about the following:

- The characteristics of the ZD created by the COR.
- The risk points identified when creating the ZT (proximity work, work at heights, work in confined spaces, work on a public road, etc.).

The **AZT**, or the team under AZT's responsibility, and with the on-site supervision and direction of the AZT, will proceed to sequentially perform the following actions to create the ZT:

- Verification of the absence of voltage on all conductors that penetrate the ZT, and as close as possible to the ZT, immediately prior to earthing and short-circuiting.
- Earthing and short-circuiting, as close as possible to the working point and on both sides of that point, of all conductors that penetrate the ZT. On overhead networks, at least one of the earthing and short-circuiting connections must be visible from the work location at all times. Locking, if possible, and signalling of earthing connections. In the case of cables or other equipment in which the earthing connections of the ZT could be the same as those of the ZD, the AZT will verify that correct prior earthing has been performed at the ends of the same (unless, while exercising different roles, the same person has performed the operation, in which case this redundant verification will not be necessary).
- The establishment of safety signage to delimit the ZT. If there are elements of an installation in the proximity of the ZT that have to remain live, additional protection measures must be adopted if work is going to be performed within the proximity zone.

Every action must be recorded in the format corresponding to "Tagouts. Creation and handover of the work zone" (**Appendix 05**), before continuing with the next action.

Once the ZT has been created, the five golden rules for safe de-energised work on the installation will have been complied with.

6.6.3. Reception of the work zone by the Work Foreman

Once the ZT has been created, the **AZT** will hand it over to the **JT**, who will receive it, will verify that it has been created correctly and will accept it.

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If the **AZT** and the **JT** are the same person, the **AZT/JT** must designate a qualified person of their **ET**, who was involved with establishing the ZT and who must also sign the reception document.

The **JT** must adopt the safety measures at the actual work location that may be necessary to guarantee the safety of the JT and of the personnel under the JT's orders during execution of the work. The JT will explain, to all members of the **ET**, the work to be performed, the limits of the ZT and all other aspects that could condition the development of the work, as well as information about any risk that may not be immediately perceivable by them. All the members of the ET must sign the record, thereby acknowledging that they have received and understood this information from the JT (**Appendix 05**).

The **AZT** will, through an adequate medium (by phone, etc.), record confirmation that the ZT has been created, that it was handed over to the **JT** and that work is beginning.

As from this moment, the AZT may leave the installation (but must remain reachable by the COR).

6.7. Execution of de-energized work within the work zone

The **JT** must leave record of the actions described in this section by completing the forms established in the format, "Tagout. Records during the execution of work", a model of which is presented in **Appendix 06**.

The JT must monitor the personnel under his care who come and go, and the JT must, if he deems it appropriate and under his responsibility, authorise access by any person unrelated to his team who may have to perform other tasks (control, inspection, supervision of work, etc.).

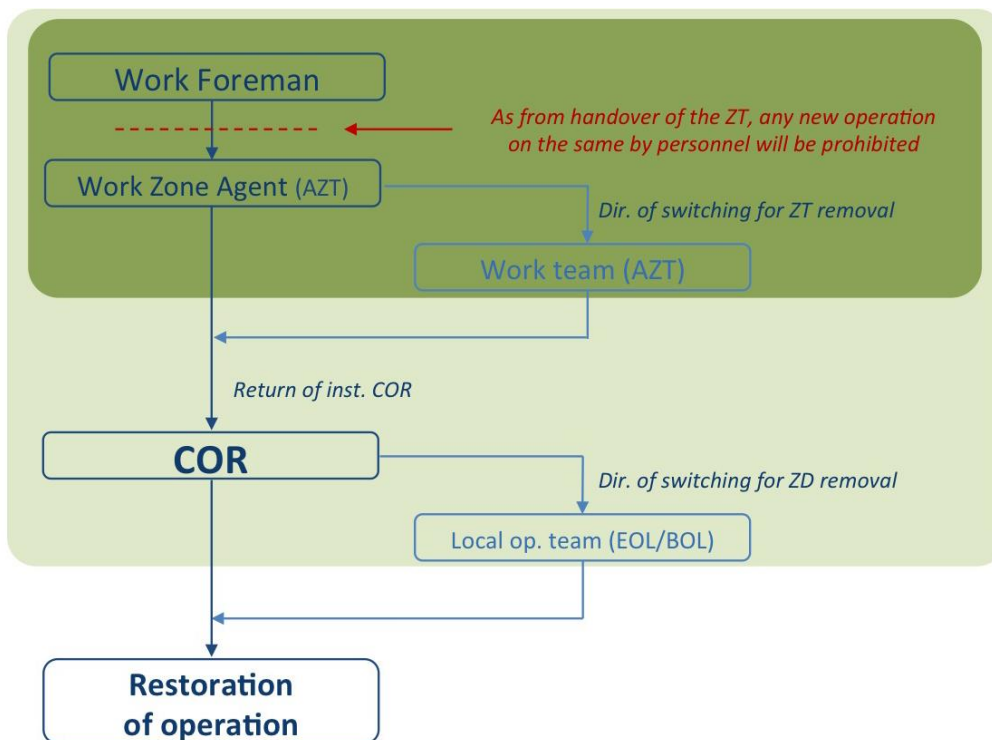
Outside persons will sign the corresponding record, thereby recording that they have been informed of the risks.

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6.8. End of work, removal of the work zone and return of the installation.

Once all work has been completed, the sequence described to create the ZD and the ZT will be performed in reverse order, according to the following basic diagram and instructions:



The **AZT** and the **JT** will leave record of the actions described in this section, therefore filling out the forms established in the format corresponding to "Tagouts. End of work, removal of the work zone and return of the installation", whose model is shown in **Appendix 07**.

The **AZT** is responsible for correct removal of the ZT, therefore using his work team or using the **JT**. In any event, the **AZT** will direct and supervise, on site, the necessary actions for undoing said zone.

The **JT** will inform the **AZT** that the ZT can be undone. As from that moment, any new operation by personnel in the ZT will be prohibited.

The earthing connections of the ZT must be removed sequentially, one by one, therefore recording each removal action in the field using the corresponding format, "Tagouts. End of work, removal of the work zone and return of the installation". The **AZT** will thus ensure that all earthing connections have been removed from the ZT before handing over the installation to the **COR**.

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The **AZT** will call the **COR** to confirm removal of the ZT and to return the installation to the **COR** so that it can be put into service. In the event that there are several ZTs in a same tagout, the **AZT** will not call the **COR** until all the work zones have been undone.

The **COR** will request that the **AZT** confirm each of the actions performed to undo the ZT:

- Withdrawal of personnel and removal of the delimitation of the ZT.
- Removal of all earthing connections of the ZT.

The **COR** will request that the **AZT** confirm that all the corresponding records have been completed.

The **COR** will proceed to finalise communications with the **AZT** and will initiate communications with the **EOL/BOL**, thereby ordering it to perform the necessary local switching in order to undo the ZD and restore service:

- Removal, if there were any, of the earthing and short-circuiting systems of the ZD.
- Unlocking and removal of the signage of disconnection devices.
- Closing of the disconnection devices to restore power, if local switching were necessary.

6.9. Emergencies and failures

An emergency or failure is understood as any critical situation that might affect the safety of people, of the installations themselves or of the electrical service, and it therefore requires immediate intervention on said installations, either by urgently leaving them without power (urgent, unplanned tagout) or, if the installation is already without power due to the action of protection systems, initiating the tasks of finding the fault and subsequently repairing it.

In cases of emergency or failure, the tagout procedure will be modified in the aspects included in this section.

In the event of an emergency, the **COR**, depending on the information received from the operational units in the field, will determine if it is applicable to grant an urgent tagout.

The existence of a failure could be detected by the **COR** in various ways (calls from customers or personnel of the group, trips by protection equipment, etc.). The **COR** will register the corresponding incident in the SGI/SDS and will fill out the associated information in the most appropriate fields, to the extent that information is provided by the various parties.

Once the failed section has been isolated, the **EOL/BOLs** will make the necessary rounds through the installations to identify the exact point of the failure. The **AZT**, who will normally form a part of the **EOL/BOLs** for locating the failure and who will be the same person as the **JT**, will identify himself to the **COR** as the person responsible for creating the ZT and for executing the work within the ZT, therefore providing his mobile

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phone number and giving a brief description of the work to be performed according to the type of failure. If nobody identifies themselves to the **COR** as the **AZT**, the **COR** would call the responsible person at the group so that that person designates the **AZT** and **JT**.

The **COR** will verify that the **AZT** is among the list of qualified personnel provided by the Maintenance Unit and will inform the **AZT** of the incident number in the SGI/SDS so that the **AZT** records the number in the form on site. If the **JT** were someone other than the **AZT**, said **JT** will introduce himself as such to the **AZT** and will assume the responsibilities indicated in this procedure.

The **COR** and the **AZT** will ensure that the zone isolated from power meets the necessary conditions so that the ZT can subsequently be created within it. Therefore, in addition to the switch opening operations performed while locating the failure, the **COR** will proceed to perform the additional switching operations to create the ZD, either with the **AZT** acting as the **EOL/BOL** or with other **EOL/BOLs** that are available.

The **AZT**, before creating the ZT, must perform prior, on-site planning based on the points to be analysed that are indicated in the planning section of this procedure.

In these cases, where planning of the work has been done on site, it is especially important to perform rigorous control prior to beginning the work, according to procedure NT.00034.GN-SP.ESS. PT 1. "Health and Safety Standard: Part 1: Control prior to beginning work", in order to identify unique risk situations.

6.10. Work related to third parties

The same procedure herein described will be applicable, except for what is set forth in the following points and barring the provisions forth in local legislation or in contracts signed with third parties.

A meeting will always be held with the third party to plan and coordinate the work.

Work to be performed by Gas Natural Fenosa at installations shared with another electric utility

This case applies to transformers or lines on which each end is operated and maintained by a different electric utility.

The corresponding provisions set forth in this standard will apply, and in addition, those requisites that the other electric utility may have considered in its procedures for work on its installations.

Work to be performed by Gas Natural Fenosa on installations owned by a third party but operated and/or maintained by the group

This case applies to positions of third parties at substations of the group or at switching (or transformer) substations owned by a third party but operated and/or maintained by Gas Natural Fenosa.

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The **COR** of Gas Natural Fenosa will coordinate with the third party to ensure correct creation of the ZD. Once created, it will be handed over to the **AZT** according to the provisions set forth in this standard.

Tagout requested by Gas Natural Fenosa for work that might invade the danger zone of an installation owned by another electric utility

This case applies to work to be performed by the group, whether electrical or not, which requires the tagout of an installation of another electric utility because the minimum distances cannot be met.

The unit of the group that is responsible for performing the work will contact the other electric utility so that it processes the tagout according to its own procedures and hands over the installation without power and with the earthing connections deemed necessary by that electric company.

Tagout requested by a third party for work, electrical or not, on installations owned by Gas Natural Fenosa.

This applies to work to be performed by a third party within installations owned by Gas Natural Fenosa or within installations for which the group has operational responsibility (for example, the installation of communications equipment or the laying of fibre optic lines within the group's installations, etc.) in which Gas Natural Fenosa must therefore create a ZT at the installation so that the third party can work within it.

For this type of work, the AZT will be called the "Third-Party Agent" (APT), and the specific forms regarding this type of work for preparing and returning the installation will be used (**Appendixes 08** and **09**).

For this type of work:

- The requester of the work will be the third party, and the tagout applicant will be the responsible unit of the installation.
- The applicant will designate the APT of the work (own or contractor personnel) and will include, in the application, the mobile telephone number of both the APT and the JT of the third party.
- The APT will create the ZT and will hand it over to the JT of the third party. In this case, the JT and his team may not act as the EC.

6.11. Complementary documents to this standard that must be prepared by companies of the group to which the standard applies

To correctly apply this standard, it is essential to use the following documents:

Specific procedure, "Management of tagouts on the high-voltage power grid"

Every country will have a detailed procedure for managing tagouts, based on the criteria contained in this standard.

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Specific procedure, "Management of work that affects the high-voltage power grid"

The purpose of this specific procedure is to define the methodology followed for managing work that affects the distribution grid with a voltage of equal to or greater than 1 kv, regarding the part that deals with applying for and processing tagouts, according to local practice and regulatory restrictions and/or obligations (deadlines, times, etc.).

Technical Instruction, "Communication Protocol between the Power Grid Operations Centre and field personnel"

The purpose of this technical instruction will be to establish a remote oral communications protocol between personnel of the Power Grid Operations Centre and the personnel who perform HV work in the field in order to ensure that communications between them both take place clearly, reliably and securely.

Technical Instruction, "Operation of and Switching on Installations of ≥ 1 kv for de-energised work"

The purpose of this Technical Instruction will be to establish the procedure to be followed on installations of Gas Natural Fenosa to perform Switching, Locking and Signalling; to Verify the absence of voltage; and to Delimit work zones on HV installations of > 1 kv in order to perform de-energised work on high-voltage installations or within the vicinity thereof.

Likewise, this document must list all the personal protective equipment (PPE) and collective protective equipment (CPE) that may be necessary to perform the described activities.

An essential aspect of this instruction is the listing and definition of the characteristics of the various prohibition and warning signs to be used in the entire process, as well as the locking elements.

Appendix 10 of this standard provides an example of the characteristics of these signs and locking elements, the structure and details of which should be considered in the Technical Instructions that could be drafted.

Technical Instruction, "Adequate installation of earthing and short-circuiting connections on supports"

The purpose of this instruction will be to set forth the best practices and recommendations for the most effective and safe installation of portable earthing and short-circuiting devices in work zones, in accordance with the standard, IEEE Std 1048™-2003 "Guide for Protective Grounding of Power Lines", and similar studies.

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7. Appendixes

Appendix 02 Special tagouts

Appendix 03 Matrix of responsibilities

Appendix 04 Tagout planning report (IPD)

Appendix 05 Creation and handover of a work zone

Appendix 06 Records during work execution

Appendix 07 End of work, removal of the ZT and return of the installation

Appendix 08 Preparation for work performed by third parties in the vicinity of high-voltage installations of GNF

Appendix 09 Return of an installation at the end of work performed by third parties in the proximity of high-voltage installations of GNF

Appendix 10 Example of signage and locking elements

The **Appendixes** that contain models of records provide suggested forms.

These records may be in electronic format or in paper format. Printing on paper will be carbonless so that the **AZT** and the **JT** (or the third party) can keep their copies when the **AZT** leaves the installation.

Different forms must be used for different work zones and for different **JTs**.

Forms will be filed according to the requirements of each particular company.

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Appendix 02. Special tagouts

The minimum list of situations in which a tagout is considered *special* is the following:

- Simultaneous and interrelated tagouts in which there is a variation of any of the isolation points.
- Work in the proximity of other, non-isolated high-voltage elements.
- Remodelling of centres (transformer, substations, etc.) where only one HV part of the installation is tagged out, and other non-isolated elements of the installation remain live within the centre.
- Any other work for which the definition and/or creation of the ZD and/or ZT may be considered complex.

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Appendix 03 Matrix of responsibilities

	RQSTR.	APLCNT.	COR	EOL	AZT	EP/EC	JT	ET	REPR.
WORK PLANNING									
Defines de-energised work, object of the tagout	R	P							
Defines the tagout zone and the work zone	P	R							
Evaluates work in proximity and other risks	P	R							
Performs field visit for planning the tagout	P	R			P				P
Prepares the tagout planning report	P	R			P				P
Prepares the de-energised work planning report	R								P
TAGOUT REQUEST									
Sends the tagout request	I	R	I		I				I
Analyses the tagout and makes remarks	I	I	R (*)		I				I
Approves/rejects the tagout request	I	I	R (*)		I				I
CREATION OF THE TAGOUT ZONE									
Creates the tagout zone			A	R					
Hands over the tagout zone			R		I				
Receives the tagout zone			I		R	I			
CREATION OF THE WORK ZONE									
Creates the work zone					A	R			
Hands over the work zone					R		I		
Receives the work zone			I		I		R	I	
EXECUTION OF DE-ENERGISED WORK									
Executes de-energised work							A	R	
END OF WORK AND RETURN OF THE INSTALLATION									
Notifies the end of work					I		R		
Undoes the work zone					A	R	I		
Returns the work zone			I		R	I			
Undoes the tagout zone and energises the installation			A	R					

(*) The Scheduling and Operational Follow-up Unit is the unit that performs this task on installations with a voltage of > 33 kv.

R = Performs
A = Assures correct performance
I = Is informed
P = Participates

RQSTR. REQUESTER
APLCNT. APPLICANT
REPR. REPRESENTATIVE OF THE COMPANY THAT IS RESPONSIBLE FOR THE FIELD WORK

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Appendix 04. Tagout planning report (IPD)

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TAGOUT PLANNING REPORT (IPD)

The objective of this report is to show the result of the tagout planning in order to define the tagout zone and the work zone, as well as the identified risks.

REPORT DATE:

REQUESTER OF THE WORK:

APPLICANT OF THE WORK:

INSTALLATION TO BE TAGGED OUT:

DESCRIPTION OF THE DE-ENERGISED WORK TO BE PERFORMED, OBJECT OF THE TAGOUT:

On page 3 of this report, provide a drawing with the location of the tagout zone and the work zones.

LIST OF OTHER INSTALLATIONS ASSOCIATED WITH THE TAGOUT (*):

(*) For each installation, indicate the type to which they belong, from among the 5 possible types: 1. Installation to be switched. 2. Installation to be tagged out. 3. Installation under a special scheme. 4. Installation where other work related to the installation will be performed (indicate the work). 5. New installation to be put into service.

COMPANY THAT WILL PERFORM THE WORK OF CREATING THE WORK ZONE:

COMPANY THAT WILL PERFORM THE DE-ENERGISED WORK, OBJECT OF THE TAGOUT:

To be completed by the Applicant:	YES	NO
The tagout is special.		
A field visit has been performed.		
There is more than one work zone or more than two jobs in the same work zone.		
The work to create a work zone requires the designation of a Prevention Officer.		
The report for the planning of de-energised work (IPTST) has been drafted by the requester.		
Risk points associated with the creation of the tagout zone (ZD) and the work zone (ZT) have been identified (*).		

(*) Indicate on the last page of this report.

PERSONS WHO HAVE PARTICIPATED IN DRAFTING THIS REPORT:

Name	Worker identification	Company	Role in the tagout	Signature

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Appendix 04 Tagout planning report (IPD) (page 2 of 4)

TAGOUT PLANNING REPORT (IPD)

REPORT DATE:

REPORT STATUS:

Provisional / Definitive

INSTALLATION TO BE TAGGED OUT:

RECORDS TO BE COMPLETED IN THE EVENT THAT THE VISIT HAS BEEN MADE

PEOPLE PARTICIPATING IN THE VISIT

Name	Worker identification	Company	Role in the tagout	Signature

IDENTIFIED RISK POINTS

	YES	NO	ZD	ZT
WORK IN PROXIMITY				
NEED TO PERFORM HOT WORK				
NEED TO REQUEST SPECIAL SCHEMES				
SWITCHING ELEMENTS IN POOR CONDITION OR INACCESSIBLE				
DEFICIENT COVERAGE FOR COMMUNICATING WITH THE COR				
RISK ASSOCIATED WITH CREATING ZONES (work at heights, confined space, public road, etc.)				
SWITCHING SEQUENCE FOR SIMULTANEOUS OR RELATED WORK				

ZD: Tagout Zone ZT: Work Zone.

For each identified risk point, add details on an attached sheet.

Attach a plan or drawing to the report (drawn on attached page 3), thereby unequivocally identifying the tagout zone and the work zone. In the event of work in proximity, show the following on the plan or drawing:

- Live points where work will be performed in proximity.
- Zones where shielding will be installed.

RECEPTION AND ACCEPTANCE OF THE REPORT BY THE AZT AND JT

Work Zone Agent (AZT):

Work Foreman (JT)*:

Name:

Name:

Company:

Company:

Signature

Signature

Date and time:

Date and time:

* In the event that the JT and the AZT are the same person, the report will be signed by the same qualified worker of the work team designated by the JT who is going to sign the work zone creation report.

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Appendix 04 Tagout planning report (IPD) (page 3 of 4)

TAGOUT PLANNING REPORT (IPD)

REPORT DATE:

REPORT STATUS:

Provisional / Definitive

INSTALLATION TO BE TAGGED OUT:

DRAWING WITH UNEQUIVOCAL IDENTIFICATION OF THE TAGOUT ZONE AND THE WORK ZONE

Identify the following on the drawing:

- Isolation points and the installation points of the necessary earthing connections to create the ZD.
- Earthing connection points to create the ZT, numbered in correlation on the drawing (1, 2, 3, etc.) according to the installation order in the field and for the subsequent identification thereof.
- For work in proximity, the closest points of the tagged-out installation to other live elements, the type of shielding to be used and/or the location of physical barriers.

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Appendix 04 Tagout planning report (IPD) (page 4 of 4)

TAGOUT PLANNING REPORT (IPD)

REPORT DATE:

REPORT STATUS:

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INSTALLATION TO BE TAGGED OUT:

DESCRIPTION OF IDENTIFIED RISKS

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Appendix 05. Creation and handover of the work zone

(page 1 of 2)

TAGOUTS. CREATION AND HANDOVER OF THE WORK ZONE

INSTALLATION:.....

POSITION:.....VOLTAGE LEVEL:TAGOUT ORDER NUMBER:

At hours on[day][month], the work zone is created.

1. PREREQUISITES BEFORE BEGINNING WORK

To be completed by the Work Zone Agent (AZT) and the Work Foreman (JT).

	AZT		JT	
	YES	NO	YES	NO
I know and have the necessary documentation to perform this work (Tagout Order, IPD).				
Indicate if the AZT and the JT are the same person.			N/A	N/A
The necessary shielding of live elements has been previously set up.			N/A	N/A
I have the necessary qualification according to applicable requirements.				

The work team that is going to perform the switching to create the work zone has been informed by the AZT about and has understood the work to be performed, in addition to the identified risk points and those aspects that could condition the development of the work:

Name	Worker identification	Company	Signature

2. CREATION OF THE WORK ZONE BY THE AZT

To be completed sequentially by the Work Zone Agent (AZT).

WORK ZONE	PERFORMED		TIME
	YES	NO	
I have received the Tagout Zone from the COR, and it coincides with the Tagout Zone indicated in the IPD.			
I have directed the tasks for verifying the absence of voltage, the installation of the earthing connections of the Work Zone (*) and of the locking (if applicable) and signage.	Earth No. 1		
	Earth No. 2		
	Earth No. 3		
	Subsequent ones		
I have directed the tasks of delimiting and sign-posting the Work Zone.			

Note: If any of the earth connections of the ZT were already installed because they were the same as an earth connection of the Tagout Zone, the AZT will check the installation of the earth connection and will proceed to lock it, if applicable, and sign-post it as a ZT earth.

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Appendix 05 Creation and handover of the work zone (page 2 of 2)

TAGOUTS. CREATION AND HANDOVER OF THE WORK ZONE

INSTALLATION:.....

POSITION:.....VOLTAGE LEVEL:TAGOUT ORDER NUMBER:

3. HANDOVER AND RECEPTION OF THE WORK ZONE

Work Zone created by the Work Zone Agent (AZT):

Work Zone verified and accepted by the Work Foreman (JT) (*):

Name:.....

Name:.....

Company:

Company:

Signature
.....

Signature
.....

Date and time:

Date and time:

(*) If the JT is the same person as the AZT, these fields must be completed by a qualified worker of the work team designated by the JT

To be completed by the Work Team of the JT:

The work team has been informed about by the JT and has understood the work to be performed, in addition to the limits of the Work Zone and those aspects that could condition development of the work:

Name	Worker identification	Company	Signature	Date	Time

To be completed by the AZT:

	PERFORMED		TIME
	YES	NO	
I have called the COR to report that the Work Zone has been created correctly and that all records have been completed by the AZT, the JT and the work teams.			
I am proceeding to leave the installation, I am taking a copy of this form, and I am delivering another one to the JT.			

Remarks

Make a drawing of the Tagout Zone and of the Work Zone if different from that in the IPD.

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Appendix 06. Records during work

TAGOUTS. RECORDS DURING EXECUTION OF THE WORK

INSTALLATION:.....

POSITION:.....VOLTAGE LEVEL:TAGOUT ORDER NUMBER:

To be completed by the Work Foreman (JT) every day before resuming work.

I have verified that the earth connection of the Work Zone is correct, and I have completed the check prior to beginning work.

Name	Worker identification	Company	Signature	Date	Time

To be completed by the people on the JT's Work Team who were subsequently included on the team and who have therefore not signed the "Work Zone Creation" form.

The people of the work team have been informed about by the JT and have understood the work to be performed, in addition to the limits of the Work Zone and those aspects that could condition development of the work:

Name	Worker identification	Company	Signature	Date	Time

To be completed by the new JT whenever there may have been a JT change (provisional or definitive).

I know and have the necessary documentation to perform this work (Tagout Order, IPD). I have the necessary qualification according to requirements.

Name	Worker identification	Company	Signature	Date	Time

To be completed by unrelated personnel who are authorised by the JT to enter the Work Zone.

I have been informed about the risks associated with the installation and about the limits of the Work Zone.

Name	Worker identification	Company	Signature	Date	Time

Remarks

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Appendix 07. End of work, removal of the ZT and return of the installation

(page 1 of 2)

TAGOUTS. END OF WORK, REMOVAL OF THE WORK ZONE AND RETURN OF THE INSTALLATION

INSTALLATION:.....

POSITION:.....VOLTAGE LEVEL:TAGOUT ORDER NUMBER:

At hours on[day][month], the work on the indicated installations has ended, wherefore the following operations have been performed and checked:

To be completed by the JT and the AZT.

END OF WORK	SIGNED BY THE JT (*) (NAME AND SIGNATURE)	VERIFIED BY THE AZT (NAME AND SIGNATURE)
Removal of tools, work materials and protection and signalling devices used.		
	DATE AND TIME:	DATE AND TIME:
Personnel withdrawn, re-grouped and alerted that service is going to be returned to normal.		
	DATE AND TIME:	DATE AND TIME:

(*) If the JT is the same person as the AZT, these fields must be completed by a qualified worker of the work team designated by the JT.

The work zone is going to be removed. As from that moment, any new operation by personnel in the work zone will be prohibited.

To be completed by the Work Zone Agent (AZT).

	AZT	
	YES	NO
I have verified the work zone to be undone in order to identify risk points.		
I have checked with the COR that the special schemes of other installations continue to be active.		

To be completed by the AZT.

REMOVAL OF SAFETY MEASURES FROM THE WORK ZONE	PERFORMED		TIME
	YES	NO	
All Work Foremen have signed this end-of-work record.			
Removal of earth connection No. 1			
Removal of earth connection No. 2			
Removal of earth connection No. 3			
Removal of all other earth connections (*): 4 5 6 7 8 9 10			
Removal of signage from the work zone.			
I have called the COR to report that the Work Zone has been removed and to return the installation to the COR.			

(*) Circle the numbers of existing earth connections, and cross out the numbers of the earth connections that do not exist.

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Appendix 08. Preparation for work performed by third parties in the vicinity of high-voltage installations of GNF

(page 1 of 2)

TAGOUTS. PREPARATION OF THE INSTALLATION FOR WORK IN THE VICINITY PERFORMED BY THIRD PARTIES

INSTALLATION:.....

POSITION:.....VOLTAGE LEVEL:TAGOUT ORDER NUMBER:

At hours on[day][month], the work zone is created.

1. PREREQUISITES BEFORE BEGINNING WORK

To be completed by the Agent for Third Parties (APT).

	APT	
	YES	NO
I know and have the necessary documentation to perform this work (Tagout Order, IPD).		
Indicate if the APT and the JT are the same person.		
The necessary shielding of live elements has been previously set up.		
I have the necessary qualification according to applicable requirements.		

The work team that is going to perform the switching to create the work zone has been informed about by the APT and has understood the work to be performed, in addition to the identified risk points and those aspects that could condition development of the work:

Name	Worker identification	Company	Signature

2. LOCAL EARTH CONNECTIONS BY THE APT

To be completed sequentially by the Agent for Third Parties (APT).

WORK ZONE	PERFORMED		TIME
	YES	NO	
I have received the Tagout Zone from the COR, and it coincides with the Tagout Zone indicated in the IPD.			
I have directed the tasks for verifying the absence of voltage, for installing the earthing connections and for locking (if applicable) and signage.	Earth No. 1		
	Earth No. 2		
	Earth No. 3		
	Subsequent ones		

Note: If any of the earth connections were already installed because they were the same as an earth connection of the Tagout Zone, the APT will check the installation of the earth connections and will proceed to lock them, if applicable, and sign-post them.

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Appendix 08 Preparation for work performed by third parties in the vicinity of high-voltage installations of GNF (page 2 of 2)

TAGOUTS. PREPARATION OF THE INSTALLATION FOR WORK IN THE VICINITY PERFORMED BY THIRD PARTIES

INSTALLATION:.....

POSITION:.....VOLTAGE LEVEL:TAGOUT ORDER NUMBER:

3. INFORMATION FOR THE THIRD PARTY REGARDING THE FACT THAT THE INSTALLATION IS PREPARED

Installation prepared by the Agent for Third Parties (APT):

Installation checked and accepted by the third party:

Name:.....

Name:.....

Company:

Company:

Signature
.....

Signature
.....

Date and time:

Date and time:

To be completed by the APT.

	PERFORMED		TIME
	YES	NO	
I have called the COR to report that all records have been completed by the APT, the work team and the third party.	<input type="checkbox"/>	<input type="checkbox"/>	
I am proceeding to leave the installation, I am taking a copy of this form, and I am delivering another one to the third party.	<input type="checkbox"/>	<input type="checkbox"/>	

Remarks

Make a drawing of the Tagout Zone and of the location of earth connections if different from that in the IPD.

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Appendix 09. Return of the installation at the end of work performed by third parties in the vicinity of high-voltage installations of GNF

(page 1 of 2)

TAGOUTS. RETURN OF THE INSTALLATION AT THE END OF WORK PERFORMED BY THIRD PARTIES IN THE VICINITY

INSTALLATION:.....

POSITION:.....VOLTAGE LEVEL:TAGOUT ORDER NUMBER:

At hours on[day][month], the work on the indicated installations has ended, wherefore the following operations have been performed and checked:

To be completed by the Agent for Third Parties (APT) and by the third party.

END OF WORK	CONFIRMED BY THE THIRD PARTY (NAME AND SIGNATURE)	VERIFIED BY THE APT (NAME AND SIGNATURE)
Removal of tools, work materials and protection and signalling devices used.		
	DATE AND TIME:	DATE AND TIME:
Personnel withdrawn, re-grouped and alerted that service is going to be returned to normal.		
	DATE AND TIME:	DATE AND TIME:

The local earth connections are going to be removed. As from that moment, any new operation by personnel of the third party will be prohibited.

To be completed by the APT.

REMOVAL OF SAFETY MEASURES FROM THE WORK ZONE	PERFORMED		TIME
	YES	NO	
The Third Party has signed this end-of-work record.			
Removal of earth connection No. 1			
Removal of earth connection No. 2			
Removal of earth connection No. 3			
Removal of all other earth connections (*): 4 5 6 7 8 9 10			
Removal of signage from the work zone.			
I have called the COR to report that the local earth connections have been removed and to return the installation to the COR.			

(*) Circle the numbers of existing earth connections, and cross out the numbers of the earth connections that do not exist.

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Appendix 09 Return of the installation at the end of work performed by third parties in the vicinity of high-voltage installations of GNF (page 2 of 2)

TAGOUTS. RETURN OF THE INSTALLATION AT THE END OF WORK PERFORMED BY THIRD PARTIES IN THE VICINITY

INSTALLATION:.....

POSITION:.....VOLTAGE LEVEL:TAGOUT ORDER NUMBER:

To be completed by the APT if different from the one who installed the local earth connections.

APT	
YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I know and have the necessary documentation to perform this work (Tagout Order, IPD).
I have received, from the APT who installed the local earth connections, the necessary information about the same in order to undo them.
I have the necessary qualification according to applicable requirements.

To be completed by the work team of the APT who may not have participated in installing the local earth connections.

The work team has been informed about by the APT and has understood the work to be performed, in addition to the limits of the Work Zone and those aspects that could condition development of the work:

Name	Worker identification	Company	Signature	Date	Time

Remarks

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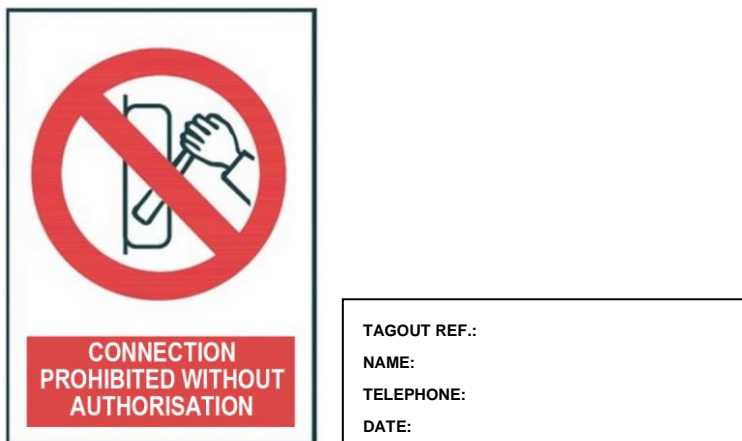
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Appendix 10. Example of signage and locking elements

To carry out the IT, "Operation of and switching on installations of ≥ 1 kv for de-energised work", some examples of the type of signage to be used are shown below:

PROHIBITION SIGNS

These rectangular signs will contain the red circular shape and red diagonal line, and a black pictograph on a white background:



They may be adhesive or solid, and they will be installed on the locking element or, in default thereof, on the actuating element, on the control handle or on the insertion of the actuating handle or lever.

In the case of substations where there may be a centralised control panel (SOAL), the access door to the same must also be sign-posted.

The tagout identification will be completed in the available space of the legend, where at least the tagout reference will be indicated, as well as the contact telephone numbers of the COR and of the AZT.

WARNING SIGNS

These signs will be used to indicate the following concepts:

"EARTHS CONNECTED"

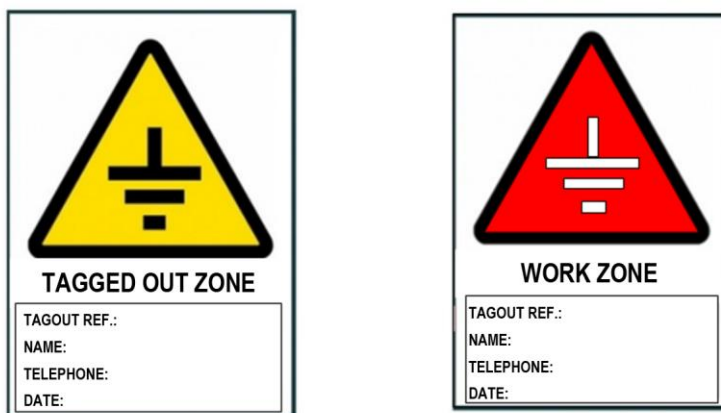
They will be rectangular signs with a black pictograph of the earth symbol (stripes in the shape of an inverted triangle) and black writing on a yellow or red background, depending on whether it is a ZD (yellow) or a ZT (red).

They may be adhesive or solid.

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The sign identification will be completed in the available space of the legend, where the tagout reference will be indicated, as well as the contact telephone numbers of the COR and of the AZT:



"TESTING ZONE"

They will be rectangular with a black pictograph of the "Electrical Hazard" symbol and black writing on a yellow background.

Its use is mandatory for delimiting the testing zone within a work zone. A sufficient number of signs will be used according to the delimitation of the testing zone:



LOCKING ELEMENTS:

These elements will guarantee that switching is prevented by locking the actuating mechanism. All locking devices to be used will be officially approved according to the applicable catalogue of signage, delimitation and locking elements, and they will identify the person responsible for installing it, either on the element itself or by using a complementary tag that accompanies the locking device.

Preferably, padlocks will be used. Two models are distinguished, depending on the planned use: **tagout zone** or **work zone**.

They are differentiated by colour according to use. In other words, yellow-coloured padlocks will be used to lock switching elements of the **tagout zone** and red-coloured padlocks will be used for locking elements of the **work zone**.

On one side, they will have a pictograph indicating that switching is prohibited, and on the other side they will have an identifying sticker with information about the person who is

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responsible for installing it. This identification may be replaced by an identifying tag that accompanies installation of the padlock:



In the event that any of the limits of the tagout zone and of the work zone are the same on the same locking element, to facilitate installation, a multiple, non-metallic interlock device may be used to receive up to 6 padlocks:



For singular switching elements, adjustable tagout cables may be used, or similar devices, of the type shown in the image. They will be accompanied by the required safety tags:



In cases in which it is necessary to lock small, automatic circuit breakers, circuit breaker locks that allow the installation of a padlock that prevents the spurious tripping thereof will be used, such as the example that is shown:



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