FRENCH REPUBLIC

Ministry of Spatial Planning and
Decentralisation

Order of

laying down detailed rules for implementing Decree No 2017-694 of 2 May 2017, as amended, on the protection of workers working on or contributing to the operation of rail or guided transport installations and rack railways

NOR:

Public concerned: *all those involved in the rail and guided transport sector and in rack railway transport (contractors and employers, whether they be railway transport undertakings, guided transport undertakings, infrastructure managers, or operators and undertakings working on their behalf), all employers whose workers are required to work in a risk exposure zone, training bodies.*

Subject: *detailed rules for the application of measures to protect the health and safety of workers from the risks arising from rail or guided transport vehicle and rack railway traffic, electrical traction installations, vehicle electrical equipment and railway technical and safety installations.*

Entry into force: *this Order shall enter into force 18 months after the date of publication of Decree XXX amending Decree No 2017-694 of 2 May 2017 on the protection of workers working on or contributing to the operation of rail or guided transport installations and rack railways.*

Application: *this Order is adopted for the application of Decree No 2017-694 of 2 May 2017, as amended, on the protection of workers working on or contributing to the operation of rail or guided transport installations and rack railways.*

The Minister for Labour, Health, Solidarity and Families, the Minister attached to the Minister for Labour, Health, Solidarity and Families, responsible for labour and employment, the Minister for Spatial Planning and Decentralisation and the Minister attached to the Minister for Spatial Planning and Decentralisation, responsible for transport,

Having regard to Commission Implementing Regulation (EU) No 402/2013 of 30 April 2013, as amended, on the common safety method for risk evaluation and assessment and repealing Regulation (EC) No 352/2009;

Having regard to Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services;

Having regard to Notification No XXX/XXX/F submitted to the European Commission on XXXXX;

Having regard to the Transport Code;

Having regard to the Labour Code, in particular Article L. 4111-6;

Having regard to Decree No 2017-439 of 30 March 2017, as amended, concerning the safety of railway traffic on certain local railways supporting the transport of goods;

Having regard to Decree No 2017-440 of 30 March 2017, as amended, on the safety of guided public transport;

Having regard to Decree No 2017-694 of 2 May 2017, as amended, on the protection of workers working on or contributing to the operation of rail or guided transport installations and rack railways;

Having regard to Decree No 2019-525 of 27 May 2019 on the safety and interoperability of the rail installation and amending or repealing certain regulatory provisions;

Having regard to Decree No 2022-664 of 25 April 2022 on the safety of the operation of local passenger rail services;

Having regard to the Order of 23 June 2003 on the safety regulations applicable on the national railway network, in particular Article 4 thereof;

Having regard to the Order of 28 April 2004 on the safety regulations for the operation of the national railway network, in particular the annex thereto;

Having regard to the opinion of the Steering Committee on working conditions of XXXX,

Hereby order:

CHAPTER I

PROVISIONS CONCERNING THE PREVENTION OF RISKS ENGENDERED BY THE CIRCULATION OF RAIL OR GUIDED TRANSPORT VEHICLES

Article 1

For the purposes of this Order, the following definitions shall apply:

1. ‘Personnel safety officer’: a worker designated and instructed by the employer to implement the measures to prevent risks arising from the use of rail or guided transport vehicles;

2. ‘Lookout’: a worker designated and instructed by the employer to monitor and report the approach of rail or guided transport vehicles under the conditions laid down by the personnel safety officer.

Article 2

For the purpose of implementing Article 4 of the aforementioned amended Decree of 2 May 2017, the infrastructure manager or, where appropriate, the operator shall provide employers, in particular where specific working methods or operating procedures are called for, with the documentation necessary to enable workers to access and work safely on railway areas, including the plans necessary for the movement and work of workers and documents identifying local circumstances.

The documentation shall be provided prior to the first intervention, in sufficient time to allow for the documents to be taken on board, and employers shall be informed in the event of any changes that may have effects on the health and safety of workers.

The infrastructure manager or operator shall transmit the information necessary to ensure the safety of workers to the service providers it uses. In the context of a contract subject to prior competitive tendering, this information shall be provided in the consultation documents.

Article 3

For the purpose of implementing Article 4-1(II) of the aforementioned amended Decree of 2 May 2017, the training for workers operating in or near the danger zone and which is a condition for issuing the access authorisation referred to in Article 4(III) of the same Decree shall be established by a training certificate drawn up by the training body. The training certificate shall indicate at least the following information:

1) name and signature of the training organisation, date of issue of the certification;
2) name of the worker awarded the certificate;
3) date, place and duration of the training course;
4) nature of the training undertaken (theoretical and/or practical) and organisational arrangements;
5) programme of the training course, knowledge and skills acquired by the worker;
6) reference to the legal framework applicable to the training course.

The training programme for workers operating in or near the danger zone and which is a condition for issuing the access authorisation referred to in Article 4(III) of the aforementioned

amended Decree of 2 May 2017 shall take into account the recommendations contained in the common training and prevention framework for collision risks referred to in Article 4-1 of the same Decree.

Article 4

For the purpose of implementing the provisions of Article 6(II) of the aforementioned amended Decree of 2 May 2017, the values of the boundaries of the danger zone shall be set on the basis of the characteristics of the moving rail or guided transport vehicles and the blast effect they may generate when travelling at the maximum authorised speed per section of line.

The distances used to set the boundaries shall be measured from the outer edge of the rail of the operational track.

For railway tracks covered by the aforementioned Decree of 27 May 2019 or the Decree of 25 April 2022, the distances shall be set by the infrastructure manager by applying the technical specifications for interoperability, after evaluation by an assessment body in accordance with the aforementioned Implementing Regulation of 30 April 2013.

Where no technical specifications for interoperability apply, these distances shall be set by the infrastructure manager after measuring the blast effect with reference to the specifications recommended by standard NF EN 14067-4 ‘Railway applications – Aerodynamics – Part 4: Requirements and assessment procedures for aerodynamics on open track’, after assessment by an assessment body in accordance with the aforementioned Implementing Regulation of 30 April 2013. Where the infrastructure manager has not set a distance used for setting the boundaries of the danger zone, the distances set out in the Annex to this Order shall apply.

For other railways, in particular guided public transport installations governed by the aforementioned Decree No 2017-440 of 30 March 2017, local railways governed by the aforementioned Decree No 2017-439 of 30 March 2017 and rack railways, the distances shall be set by the infrastructure manager or the operator.

The values of the boundaries of the danger zone shall be communicated to employers by the infrastructure manager or the operator for each section of line, each in their own relevant area. The employer shall ensure that the workers concerned are aware of this.

Article 5

The lookout arrangements provided for in Article 8 of the aforementioned amended Decree of 2 May 2017 are as follows:

1) The lookout process includes monitoring, detecting and warning of approaching traffic. It shall be implemented in accordance with procedures that take account, in particular, of the escape conditions of the danger zone and of the tracks adjacent to the working track and the fastest running speed on the section of line or part of the track concerned. The lookout process shall be determined for each track and for each direction of traffic.

2) The warning of the approach of rail or guided transport vehicles shall be carried out either by a human lookout or by an automatic warning device.

It shall be issued within a time limit that allows workers to clear the danger zone and the tracks adjacent to the working track, taking into account the vagaries of clearance, the constraints associated with the tools used, the configuration of the premises and the direction(s) of traffic.

This time limit shall be checked under the responsibility of the employer(s) of the workers concerned in the light of changes to the construction site, working conditions and atmospheric or environmental conditions.

The lookout, assisted if necessary by distant lookouts, shall have the visibility to deliver the warning signal within the aforementioned time limit.

The automatic warning device shall be installed in such a way as to enable the warning signal to be transmitted within the aforementioned time limit.

3) The nature and form of the warning signal shall be defined by the infrastructure manager or the operator. This signal can be an audible or light signal or both at the same time.

The use of the devices emitting this signal shall be authorised by the infrastructure manager or the operator.

4) The signal shall be emitted under the conditions determined by the personnel safety officer, failing which it shall be emitted automatically, within the time limit laid down in (2) of this Article.

It shall be issued for all traffic heading towards the danger zone(s) occupied by workers, or having to be crossed by them to reach a siding, or heading towards the tracks adjacent to the working track.

5) The power of the device used shall be such that the signal emitted is perceived by all the workers concerned depending on the working environment.

The perception of this warning signal shall be guaranteed, including when workers are wearing personal protective equipment. These means of protection shall be chosen by the employer, following a risk assessment, so as to enable workers to perceive the warning.

A test of the perception of the signal by the workers concerned shall be carried out before giving the order to commence the work. For this purpose, the signal shall be emitted under conditions that are as close as possible to those under which the work is to be carried out. The signal shall be deemed to have been perceived if it is recognised by all workers.

The lookout shall be equipped with appropriate means of personal protection. They shall be positioned and shall remain outside the danger zone.

6) For tram and trolley bus guided transport installations and for the service tracks of rail transport installations, the other equivalent means of warning workers of approaching vehicle traffic and allowing the clearance of the danger zone, which may be determined on the basis of the risk assessment by the infrastructure manager or, where applicable, the operator pursuant to Article 8(II)(2) of the aforementioned amended Decree of 2 May 2017, are one or more of the following means: the automatic warning device, the lookout, running under caution at less than 30 km/h and the driver’s use of the vehicle’s audible warning device.

Article 6

The risk prevention measures relating to the use of rail or guided transport vehicles and the preparation of trains referred to in Article 10(V) of the aforementioned amended Decree of 2 May 2017 are set out below:

1) The employer shall take appropriate measures to prevent workers from:

a) moving laterally between an obstacle and parked vehicles if the gap between that obstacle and the most prominent parts of the vehicles is less than 0.70 metres;
b) passing or sheltering under a vehicle;
c) leaning on a vehicle;
d) sitting or standing on buffers and coupling devices.

For guided transport installation lines powered by contact rail, the origin of which pre-dates the entry into force of the aforementioned amended Decree 2 May 2017, movement within a gap of less than 0.70 metres may be authorised, following a risk assessment and the implementation by the employer, the infrastructure manager or, where appropriate, the operator, each in their relevant area, of appropriate safety measures, in particular specific training in the risks associated with the restricted spaces, specific signage of the zones concerned and specific operational procedures ensuring that a high level of safety is maintained.

2) Workers shall board or alight from vehicles on the side of the track, verge or platform. Where this can only be done on the side between the tracks, the worker may only operate in the danger zone of the adjacent track if there is no traffic on that track. The infrastructure manager or, where appropriate, the operator shall define the conditions for ensuring the absence of traffic on this track.

3) Workers are prohibited from entering between two vehicles to couple or uncouple these vehicles if they are not stopped and stabilised. Where vehicles are fitted with buffers, they must be in contact and under compression before the workers carry out these operations.

Workers may only enter or exit between these vehicles on the track or verge side. Where this is not possible or when the track is bordered by a platform, the employer shall set out measures to ensure the safety of workers.

CHAPTER II

PROVISIONS RELATING TO THE PREVENTION OF RISKS ENGENDERED BY ELECTRICAL TRACTION, ELECTRICAL EQUIPMENT IN VEHICLES AND TECHNICAL AND SAFETY INSTALLATIONS FOR RAIL OR GUIDED TRANSPORT

Article 7

The information that the operating undertaking and, where applicable, the manufacturer of stationary equipment or rolling stock must provide to the employer pursuant to Article 17 of the aforementioned amended Decree of 2 May 2017 shall be provided in particular by means of technical specifications, calculation notes, single-line diagrams, construction drawings, pipeline layout plans and instruction leaflets. This information shall be updated by the operating undertaking and, where appropriate, the manufacturer of stationary equipment or rolling stock, and shall be transmitted to the employer in the event of any change likely to have health and safety implications for workers.

Article 8

For the implementation of Article 27 of the aforementioned amended Decree of 2 May 2017, the following procedures shall be applied:

1) In the event of an incident, risk of accident, or the appearance of an unexpected danger of electric shock, fire or explosion, the employer shall take the following appropriate measures:

a) Every worker shall operate or cause the operation, by the fastest means at his disposal, of an emergency shut-off device or the procedure for the emergency powering-off of an electrical traction installation. The employer shall ensure that any worker moving within a rail or guided transport electrical risk zone is aware of it.

b) The undertaking operating the installation shall be immediately informed of any operation of an emergency shut-off device or of any request for an emergency power-off and of the location, reason and circumstances that gave rise to it.

Irrespective of the mode used, the power-off of the installation in question may only be considered effective when it is confirmed by the undertaking operating the infrastructure.

2) The emergency power-off of an electric traction installation shall be supplemented, if necessary, by the separation of the power collection device of a rail or guided transport vehicle from the catenary, overhead line or contact rail of the traction current and by securing the installation or part of the installation against any powering up.

This securing shall be achieved by:

a) the operation of a device with a sectioning or disconnection function;

b) the prohibition on accessing and circulating in the applicable zone of rail or guided transport vehicles using a traction current collection device;

c) the creation of one or more neutral electrical protection zones preventing the installation from being powered up by a traction current collection device.

Where the installation cut off from its power supply is equipped with permanent devices for putting the traction current back into the circuit or earthing it, these shall be used.

In the presence of voltage induced in one part of the installation by the electrical influence of conductors of another part of the installation kept live, it is necessary, in order to rescue persons in danger of electrocution or fight against fire, to disconnect the power supply of these conductors.

3) Where the disconnection of the power supply to all or part of an electrical traction installation is such as to create or aggravate a risk, emergency power-off may be deferred, in particular to allow, in the event of a fire, the release of a train from a disaster zone or from an engineering structure such as a tunnel or bridge.

After carrying out the emergency cut-off or emergency power-off procedures, once the electrical risk has been ruled out, in the event of an emergency and in particular in the event of evacuation of passengers or rescue of persons, access to rail or guided transport electrical risk zones does not require electrical clearance.

Article 9

The safety distances and characteristics of the electrical risk zones referred to in Articles 34 and 35 of the aforementioned amended Decree of 2 May 2017 are specified below.

1) The safety distances of zones at electrical risk from catenaries or overhead contact lines (OCLs) and their feeders are defined below for nominal voltages not exceeding 3 000 volts in direct current and 25 000 volts in alternating current.

   a) The vicinity zone boundary distance shall be set at 3 metres from bare, live parts.
   b) The live working zone boundary distance shall be set at 2 metres.
   c) The minimum approach distance shall be set at 1 metre.

Distances:	0 m	1 m	2 m	3 m
Bare, live electrical conductors supplied from catenaries or OCLs with no obstructions	zone 3	zone 2	zone 1	zone 0
	Bare, live conductors	Minimum approach distance	Live working zone boundary distance	Vicinity zone boundary distance

2) The safety distances of the zones at electrical risk from the contact rails are defined below for nominal voltage values not exceeding 1 500 V of direct current.

   a) The vicinity zone boundary distance shall be set at 3 metres from bare, live conductors. This distance may be reduced to the railway right-of-way boundary or to the boundary of the zone accessible to the public.
   b) The live working zone boundary distance is set at 1 metre.
   c) The minimum approach distance is set at 0.30 metres.

Distances:	0 m	1 m	2 m	3 m
Bare, live contact rails with no obstructions	zone 3	zone 2	zone 1	zone 0
	Bare, live conductors	Minimum approach distance	Live working zone boundary distance	Vicinity zone boundary distance or railway right-of-way boundary or publicly accessible zone boundary

3) Electrical risk zones with live bare parts of the electrical equipment of rail or guided transport vehicles shall include:

   a) live bare parts on roofs, such as roof lines, pantographs, trolley poles and braided bonding straps; these are considered to be zones at electrical risk from catenaries or overhead lines;
   b) live bare parts accessible from the ground, such as contact shoes and braided bonding straps; they are considered to be zones at electrical risk from contact rails;
   c) other electrical equipment of the vehicles, rendered and kept inaccessible by hoods or panels, are closed electrical service zones. They do not give rise to the delimitation of electrical risk zones.

4) The running or guide rails and other conductors, constituting the return circuit of the traction current, maintained under the technical conditions referred to in Article 20 of the aforementioned amended Decree of 2 May 2017, do not give rise to the delimitation of electrical risk zones.

5) Technical and safety installations for rail or guided transport rendered and kept inaccessible by hoods or panels, or blocked from access in a room or by fencing, are closed electrical service zones and shall not give rise to the delimitation of electrical risk zones.

Article 10

For the implementation of the provisions of Article 40 of the aforementioned amended Decree of 2 May 2017, the employer shall ensure, without prejudice to any medical restrictions, that workers have the following skills at the end of the training course:

1) technical skills and practice in accordance with the prevention rules in the domain concerned;
2) knowledge of the electrical installations and equipment concerned;
3) knowledge of the electrical risks engendered by the aforementioned installations and equipment;
4) an understanding of the risks that may arise during work and the precautions to be taken;
5) the ability to recognise at any time whether the work can be undertaken and/or continued safely;
6) the ability to implement risk prevention measures.

The information to be included in the railway electrical clearance document shall be as follows:

1) name of the employer and the worker;
2) assignment and tasks of the worker;
3) electrical installations and equipment concerned;
4) voltage domains, where applicable in direct or alternating current;
5) signatures of the employer and the worker;
6) date of validity;
7) Special authorisations or prohibitions.

The tasks that may be performed by the workers are as follows:

1) electrical operation manager;
2) lockout manager;
3) works manager;
4) intervention manager (maintenance and repairs or replacement and connection);
5) site manager;
6) electrician;
7) specific operations manager (tests, measurements, checks or manoeuvres);
8) electrical safety officer;
9) if necessary, other tasks to be specified by the employer, such as cleaning live electrical traction installations.

The definitions of the tasks referred to in points 1 to 8 are set out in the standards defining operations on electrical installations or in their vicinity, as are the recommended arrangements for their implementation referred to in Article R. 4544-3 of the Labour Code.

The common training and prevention framework for electrical risks referred to in Article 40 of the aforementioned amended Decree of 2 May 2017 may, where appropriate, specify and supplement the tasks referred to in paragraphs 1 to 8, as well as defining other tasks.

The cleaning of live electrical traction installations in the LV (low voltage) and HV (high voltage) domains, as defined in Article 13 of the aforementioned amended Decree of 2 May 2017, shall be carried out with the specially adapted vehicles referred to in Article 54 of the aforementioned amended Decree of 2 May 2017. The worker responsible for this cleaning shall hold electrical clearance and shall be trained in the cleaning operations carried out with these adapted vehicles.

For the electrical risk zones defined in Article 9 of this Order, the clearance shall specify the zones which a worker is authorised to access (zone 2, zone 3 and closed electrical service zone).

The electrical installations and equipment in question are:

1) electric traction installations;
2) technical and safety installations;
3) the electrical equipment of the rolling stock.

They shall be identified, depending on the nature of the installations and equipment, by:

1) sections of railway or guided transport lines;
2) types of points and control stations, signalling stations, rolling stock;
3) rolling stock maintenance workshops;

4) types of specific installations (rolling stock washing machines, retractable catenaries, switchable catenaries, test facilities, etc.).

The clearances shall mention, either clearly or using symbols, the indications, functions, electrical installations and equipment and voltage domains (LV or HV), as defined in Article 13 of the aforementioned amended Decree of 2 May 2017, with an indication of the voltage value(s).

The use of symbols on clearances shall take account of the recommendations of the common training and prevention framework for electrical risks referred to in Article 40 of the aforementioned amended Decree of 2 May 2017.

Article 11

For the purposes of implementing the provisions of Article 41 of the aforementioned amended Decree of 2 May 2017, the employer shall provide workers with written instructions designed to prevent the risk of electric shock when accessing, moving and working in rail or guided transport electrical risk zones.

In particular, these instructions shall set out:

1) Appropriate measures to prevent risks:
   a) direct or indirect contact of workers with electrical installations or equipment;
   b) that workers enter the return traction current circuit;
   c) when working on a conductive body, in particular subject to electrical influence;
   d) when cleaning electrical traction installations or rail or guided transport vehicles.
2) The action to be taken in the presence of:
   a) a bare or insulated electrical conductor that has fallen to the ground or collapsed, or has a deteriorated insulating envelope, or in the presence of a protective device in place with a deteriorated outer wall;
   b) electrical supports, installations or equipment on which abnormal phenomena such as crackling or sparking occur;
   c) a fire source in the immediate vicinity of overhead power lines where these have not been switched off;
   d) the risk of atmospheric overvoltage;
   e) the danger of electrocution of a person or an electrocuted person, and the measures to be taken to rescue them safely.

Article 12

For the implementation of the provisions of Article 42 of the aforementioned amended Decree of 2 May 2017, the employer shall ensure, without prejudice to any medical restrictions, that the skills of authorised workers are maintained in the following cases:

1) transfer with change of hierarchical dependency;
2) change of role;
3) interruption of operation in electrical risk zones;
4) substantial modification of electrical installations and equipment;
5) changes to working methods;

6) risky behaviour or finding of non-compliance with the requirements;
7) changes to the regulation.

Article 13

The procedures for implementing the requirements constituting the lockout and release from lockout procedures provided for in Article 50 of the aforementioned amended Decree of 2 May 2017 are defined below:

1) Installations or equipment shall be completely separated from any possible power source, according to the design of the electrical installations and equipment, by the appropriate means, in particular:

a) the visible opening of a circuit breaker or the complete disconnection of devices having a function, such as a circuit breaker or switch;
b) the opening of sectioning elements on technical and safety installations;
c) the uncoupling of the electrical connections of rail or guided transport vehicles;
d) The separation of the current collection device of rail or guided transport vehicles, such as pantographs, contact shoes or trolley poles, from the catenary, overhead line or contact rail of the traction current;
e) the shutdown of any autonomous source of electric power generation, such as the combustion engine of a rail or guided transport vehicle;
f) the separation of any autonomous source of electrical energy supply, such as accumulator or capacitor batteries.

2) The accidental reenergisation of an electrical installation or equipment shall be secured against, according to its design, by the appropriate means, such as:

a) the immobilisation of the manoeuvring or control mechanism of a device with a sectioning or cut-off function, whatever its mode of control, by a physical device;
b) the application of insulation of an appropriate efficiency or the installation of a device physically prohibiting the connection of removable electrical connections between rail or guided transport vehicles;
c) the immobilisation in the resting position of removable electrical connections between rail or guided transport vehicles;
d) the uncoupling of the electrical connections of rail or guided transport vehicles;
e) the prohibition on accessing and circulating in the applicable area of rail or guided transport vehicles using a traction current collection device;
f) the creation of one or more neutral electrical protection zones of sufficient length, preventing the installation from being powered up by a traction current capture device;
g) the application of procedures and operating methods during work on technical and safety installations for rail or guided transport.

Where it is not technically possible to implement one or more of the measures listed above, arrangements shall be made to implement appropriate preventive measures.

3) Verification, after identification, that the electrical installation or equipment has been deprived of its power supply shall be carried out directly on the installation or equipment and as close as possible to the working area with devices designed for this purpose.

With the exception of catenaries and feeders, where it is technically impossible to carry out this verification, the absence of voltage may be inferred by any means which makes it possible to obtain such verification with certainty. In this case, the operating undertaking or the manufacturer of the installation or equipment concerned shall set these means and shall inform the employer thereof in writing. The employer shall ensure that the workers concerned are aware of this.

4) Residual or stored energy must be able to be limited to a non-hazardous level and discharged without risk to workers.

The reduction of this energy shall be achieved by appropriate technical means, such as discharge circuits provided for in the design of electrical installations and equipment, additional circuits or by the implementation of procedures.

The discharge circuit must be capable, after cutting the power supply of the installation or equipment, of returning the residual voltage to a non-hazardous value in a time appropriate for the intervention.

In the presence of voltage induced in a part of the installation or equipment by the electrical influence of live conductors, specific measures must be taken to limit the residual energy to a non-hazardous level.

These measures shall consist of devices designed for this purpose to:

a) connect the installation or equipment to the traction current return circuit at appropriate intervals so as to reduce the potential difference between the conductor(s) and the rails to a non-hazardous level;
b) establish an equipotential bond to the working area in such a way as to prevent workers from entering an induction loop.

These provisions do not apply to installations and equipment powered by accumulator batteries and capacitors used as a stand-alone source of electrical power supply.

5) Protection against accidentally being powered up at high and low voltages shall be achieved by short-circuiting parts of the electrical installation or equipment by means of an appropriate device calibrated to the intensity of the short-circuit current.

Short-circuit equipment shall be arranged such that it is visible both day and night.

The operating undertaking shall define the conditions for carrying out this short-circuiting. In the case of electrical installations and equipment in the low-voltage domain, the installation of short-circuit equipment may be waived at the instruction of the operating undertaking only on condition that:

a) they are switched off by means of a visible disconnection of the power supply points or that devices provide a reliable indication of the position of the contacts;
b) there is no other possibility of re-energisation;

c) it has been previously ensured that there is no environmental-related induction risk from other networks.

For electrical traction installations exclusively equipped with permanent devices for earthing or connecting to the traction current return circuit, the exemption from short-circuiting, at the instruction of the operating undertaking, shall be possible only if the state of their position is reliably identifiable.

For technical and safety installations for rail or guided transport, where it is not technically possible or for reasons of safety and continuity of the operation of transport installations, the earthing and short-circuiting is not carried out, the operating undertaking shall set out in the instructions and indicate to the employer in writing the procedures and operating methods to ensure the safety of workers in accordance with the requirements of the manufacturer of the installations concerned. The employer shall ensure that the workers concerned are aware of this. The release from lockout procedure shall be conducted in the reverse order to the lockout procedure unless special provisions are made.

The operating procedures shall lay down, both for the lockout procedure and for the release from lockout procedure, the chronology of the operations to be carried out to ensure the safety of workers, in particular during the installation and removal of short-circuit equipment.

Article 14

The detailed rules for the implementation of Article 51 of the aforementioned amended Decree of 2 May 2017 are set out below.

1) Rail or guided transport vehicle:

Pursuant to Articles 18 and 19 of the aforementioned amended Decree of 2 May 2017 and Article 9(3)(c) of this Order, the live parts of the electrical equipment of rail or guided transport vehicles are rendered and maintained inaccessible by protections adapted to the voltage classes in the table below:

Voltage classes	**Nominal voltage value “Un” expressed in volts**		**Conditions for accessing closed electrical service zones containing live parts**
	alternating current	**smoothed direct current**	
I	Un ≤ 25	Un ≤ 60	Zones accessible to authorised workers or holders of railway electrical clearance.
II	25 < Un ≤ 50	60 < Un ≤ 120	Zones accessible to authorised workers or holders of railway electrical clearance.
III	50 < Un ≤ 500	120 < Un ≤ 750	Access shall be restricted to authorised workers or workers with railway electrical clearance and subject to protective measures being taken to prevent any direct contact.
IV	Un > 500	Un > 750	Access is restricted to workers holding railway electrical clearance and subject to the elimination of the risk provided for in

			Article 50 of the aforementioned Decree of 2 May 2017.

The arrangements for accessing the closed electrical service zones and the operating procedures shall take account of the means of preventing access either by mechanical locking or by physical separation, supplemented by labelling or procedures adapted to the situation and to the enclosed equipment.

Where access prevention is achieved by physical separation, the panels and hoods shall be removable only with the use of tools.

Where access prevention is achieved by locking, the locking shall be compatible with the use of a protective device allowing blank testing of control systems.

The operating procedures shall take account of the technical requirements and provisions laid down by the manufacturers of the equipment and devices concerned.

2) Rail or guided transport technical and safety installations:

Pursuant to Articles 18 and 19 of the aforementioned amended Decree of 2 May 2017 and Article 9(5) of this Order, access to live parts of rail or guided transport technical and safety installations shall be rendered and kept inaccessible by means of protection such as covers, panels or removed from reach in a room or by a fence.

Access to the closed electrical service zones of these installations shall be reserved only for workers designated by the employer after agreement by the operating undertaking.

The access and working arrangements and the operating procedures, in particular those relating to the elimination of the electrical risk, shall be laid down by the operating undertaking, taking into account:

a) the requirements related to the maintenance of safety and continuity of operations;
b) electrical risks, in particular those linked to the particular characteristics of the power supply of these installations;
c) the technical requirements and provisions defined by the manufacturers of the equipment and devices in question.

In the absence of rules setting out the safety distances specific to technical and safety installations, the operating undertaking shall require the application of the approved standards referred to in Article R. 4544-3 of the Labour Code concerning the vicinity zone and live working zone, boundary distances, the minimum approach distance, and the procedures and operating methods relating to the lockout of such installations.

Article 15

For the implementation of Article 53 of the aforementioned amended Decree of 2 May 2017, the provisions relating to any work in contact with the running rails and any intervention by a worker on the live parts of the traction current return circuit are specified below.

Any work in contact with the running rails may be carried out only by complying with the following requirements:

1) ensure in advance that the electrical connections and links connected to these rails are in good condition;
2) do not touch two rails simultaneously or a rail and a connection that are not electrically connected;
3) the worker must be trained for this purpose.

Any intervention by a worker on the running rails which are live parts of the traction current return circuit may be carried out only by complying with the following requirements:

1) install temporary connections adapted to the traction return current before any operation likely to affect its continuity or on the instructions of the operating undertaking in order to restore its continuity;
2) do not simultaneously touch two rails or running edges that are not electrically connected;
3) the worker must be trained for this purpose.

The employer shall lay down the conditions under which the work is to be carried out, in particular through:

1) the use of suitable tools;
2) placing at the same potential the rails or running edges that a worker is likely to touch simultaneously.

The infrastructure manager or the operating undertaking shall ensure the continuity of the protective conductors of metal structures, such as supports, signals, canopies or engineering works. Any work on the connections of electrical installations connected to the traction current return circuit must be subject to the agreement of the manager or the operating undertaking of the electrical installations concerned. The employer shall determine in writing the operating procedures and safety requirements to be observed and shall ensure that the worker is trained for this purpose and has the personal protective equipment, tools and equipment that are appropriate to the work and the risks.

The provisions referred to above are set out in the specific written requirements referred to in Article 41 of the aforementioned amended Decree of 2 May 2017.

The training of workers provided for in this Article shall take into account the recommendations of the common training and prevention framework for electrical risks referred to in Article 40 of the aforementioned amended Decree of 2 May 2017.

Article 16

The detailed rules for the implementation of Article 54 of the aforementioned amended Decree of 2 May 2017 are set out below.

For particular operations, the definitions of maintenance, cleaning, measurement and verification interventions in the presence of voltage are set out in the standards defining operations on electrical installations or in their vicinity, as are the recommended arrangements for their implementation referred to in Article R. 4544-3 of the Labour Code.

The exhaustive list of operations referred to above shall include, as appropriate:

1) Electrical traction installations in the low-voltage domain:

a) protecting against corrosion of posts and pillars of gantries, brackets and stays, bolts, where this does not require disassembly;
b) measuring the thickness of the contact wire;
c) measuring the height and stagger of the contact wire;
d) removing foreign bodies from catenaries, feeders and their supports, interruption devices by means of insulating tools authorised by the operating undertaking;
e) verifying the different constituents of the catenary.

2) Electrical traction installations in the high-voltage domain:

a) measuring the thickness of the contact wire;
b) measuring the height and stagger of the contact wire;
c) removing foreign bodies from catenaries, feeders and their supports, interruption devices by means of insulating tools authorised by the operating undertaking;
d) verifying the different constituents of the catenary.

3) Technical and safety installations of the low-voltage domain:

a) installing temporary connections;
b) replacing impedance bonds;
c) replacing electrical equipment, including lamps, fuses, capacitors;
d) connecting and disconnecting electrical connections;
e) checking and adjusting contacts;
f) measuring physical quantities (voltage, temperature, etc.);
g) detecting defects;
h) testing.

4) Electrical equipment of rolling stock in the low-voltage domain:

a) all operations on electrical equipment normally accessible without dismantling and without the use of tools under the conditions laid down in Article 15(1) of this Order;
b) connecting and disconnecting accumulator batteries;
c) replacing lamps, fuses;
d) measuring physical quantities (voltage, temperature, etc.);
e) detecting defects;
f) verifying and testing.

The training and clearance arrangements for workers are based on the corresponding provisions of the aforementioned standards and comply with the operating rules and procedures laid down by the operating undertaking, which shall validate the operating procedures and working methods.

The provisions referred to above are set out in the specific written requirements referred to in Article 41 of the aforementioned amended Decree of 2 May 2017.

Article 17

For the live works referred to in Article 55 of the aforementioned amended Decree of 2 May 2017, the definitions are those of the standards defining operations on electrical installations or

in their vicinity, as are the recommended arrangements for their implementation referred to in Article R. 4544-8 of the Labour Code.

The training and clearance arrangements for workers shall take account of the specifications recommended in the standards referred to in the previous subparagraph. They shall be the subject of written instructions from the operating undertaking.

The provisions referred to above are set out in the specific written requirements referred to in Article 41 of the aforementioned amended Decree of 2 May 2017.

CHAPTER III

MISCELLANEOUS PROVISIONS

Article 18

– This Order shall enter into force 18 months after the date of publication of Decree XXX amending Decree No 2017-694 of 2 May 2017 on the protection of workers working on or contributing to the operation of rail, guided transport and rack railway systems.

The infrastructure manager or, where appropriate, the operator shall provide the employers with the documents provided for in the aforementioned amended Decree of 2 May 2017 and in this Order at least 12 months before the date of entry into force of this Order.

The common training and prevention framework for electrical and collision risks referred to in Article 4-1(I) and Article 40(II) of the aforementioned amended Decree of 2 May 2017 shall be published free of charge in electronic format by the professional organisations representing employers at least 12 months before the date of entry into force of this Order.

I. – On the date of entry into force of this Order referred to in the first paragraph of I, the following shall be repealed:

1. Article 4 and Section 2 of the Annex to the amended Order of 23 June 2003 on the safety regulations applicable on the national railway network;

2. the annex to the amended Order of 28 April 2004 on the safety regulations for the operation of the national railway network.

Article 19

The Minister for Labour, Health, Solidarity and Families, the Minister attached to the Minister for Labour, Health, Solidarity and Families, responsible for labour and employment, the Minister for Spatial Planning and Decentralisation and the Minister attached to the Minister for Spatial Planning and Decentralisation, responsible for transport, are each responsible, in their relevant area, for implementing this Order, which shall be published in the Official Journal of the French Republic.

Done on

The Minister for Labour, Health, Solidarity and Families,
Catherine VAUTRIN

The Minister for Spatial Planning and Decentralisation,
François REBSAMEN

The Minister attached to the Minister for Labour, Health, Solidarity and Families, responsible for labour and employment,
Astrid PANOSYAN-BOUVET

The Minister attached to the Minister for Spatial Planning and Decentralisation, responsible for transport,
Philippe TABAROT

ANNEX

The boundary distances of the danger zone applicable to the transport installations referred to in Article 4 of this Order are the following if they have not been set by the infrastructure manager:

I. Values applicable on lateral signalling lines other than high-speed lines:

Speeds	Speed less than or equal to 40 km/h	Speed greater than 40 km/h and less than or equal to 160 km/h	Speed greater than 160 km/h and less than or equal to 200 km/h	Speed greater than 200 km/h and less than or equal to 220 km/h
Distances from the boundary of the danger zone	D = 1.25 m (1)	D = 1.50 m	D = 2.00 m (2)	D = 2.00 m

(1) This distance shall be increased to 1.50 m in the following cases:

a) on curved tracks for which the protrusions of railway vehicles must be taken into account;
b) on routes authorised for the use of particularly heavy exceptional transport operations.

(2) For sections of lines where the speed of high-speed rolling stock does not exceed 200 km/h and where the speed of other rolling stock does not exceed 160 km/h, the distance from the boundary of the danger zone may be reduced to 1.50 m, provided that the new boundary provides at least an equivalent level of safety for workers and that it is assessed by an assessment body in accordance with the aforementioned Implementing Regulation of 30 April 2013.

II. Special cases:

For lines exclusively dedicated to the movement of trams/trains, the specific distance from the danger zone is 1.25 m, provided that:

a) the width of the vehicles is limited to 2.65 m;
b) the speed does not exceed 100 km/h;
c) the radii of the curves are not less than 100 m.

Apart from the special cases mentioned in (a), (b) and (c), the distances mentioned in I shall apply.

III. Values applicable on high-speed lines equipped with cab signalling including connections:

Speeds	Speed greater than 220 km/h and less than or equal to 300 km/h	Speed greater than 300 km/h and less than or equal to 320 km/h	Speed over 320 km/h
Distances from the boundary of the danger	D = 2.00 m	D = 2.30 m	Not fixed

zone			