



**On approval of Rules for establishing protected zones of electrical networks and special conditions of using the lands, located in the boundaries of the zones**

*Unofficial translation*

Order of the Minister of Energy of the Republic of Kazakhstan dated September 28, 2017 № 330. Registered with the Ministry of Justice of the Republic of Kazakhstan on October 30, 2017 № 15943.

*Unofficial translation*

**On approval of Rules for establishing protected zones of electrical networks and special conditions of using the lands, located in the boundaries of the zones**

In accordance with paragraph 30-1) of Article 5 of the Law of the Republic of Kazakhstan dated July 9, 2004 "On Electric Power Industry" **I hereby ORDER:**

1. Approve the attached Rules for establishing protected zones of electrical networks and special conditions of using the lands, located in the boundaries of the zones.

2. The Department of Electric Energy and Coal Industry of the Ministry of Energy of the Republic of Kazakhstan, in accordance with the procedure established by the Legislation of the Republic of Kazakhstan, shall:

1) provide the state registration of this order with the Ministry of Justice of the Republic of Kazakhstan;

2) within ten calendar days from the date of state registration of this order direct its copy in paper and electronic forms in the Kazakh and Russian languages to the Republican State Enterprise with the Right of Economic Management "Republican Center of Legal Information of the Ministry of Justice of the Republic of Kazakhstan" for official publication and inclusion in the Reference Control Bank of Regulatory Legal Acts of the Republic of Kazakhstan;

3) within ten calendar days after the state registration of this order, send a copy of it for official publication in periodicals;

4) place this order on the Internet resource of the Ministry of Energy of the Republic of Kazakhstan;

5) within ten working days after the state registration of this order with the Ministry of Justice of the Republic of Kazakhstan, submit to the Legal Department of the Ministry of Energy of the Republic of Kazakhstan the data on execution of the actions provided for in subparagraphs 2), 3) and 4) of this paragraph.

3. Control over the execution of this order shall be entrusted to the Supervising Vice Minister of Energy of the Republic of Kazakhstan.

4. This order shall be enforced upon expiry of ten calendar days after its first official publication.

*Minister of Energy  
of the Republic of Kazakhstan*

*K.Bozumbayev*

"AGREED"

Deputy Prime Minister  
of the Republic of Kazakhstan  
-Minister of Agriculture  
of the Republic of Kazakhstan

\_\_\_\_\_ A. Myrzahmetov  
dated October 11, 2017

"AGREED"

Minister for Investment and Development  
of the Republic of Kazakhstan

\_\_\_\_\_ Zh. Kasymbek  
dated September 29, 2017

"AGREED"

Minister of Internal Affairs  
of the Republic of Kazakhstan

\_\_\_\_\_ K. Kassymov  
dated October 5, 2017

Approved  
by order № 330  
of the Minister of Energy  
of the Republic of Kazakhstan  
dated September 28, 2017

## **Rules for establishing protected zones of electrical networks and special conditions of using the lands, located in the boundaries of the zones**

### **Chapter 1. General provisions**

1. Rules for establishing protected zones of electrical networks and special conditions of using the lands, located in the boundaries of the zones (hereinafter – the Rules) shall be developed in accordance with subparagraph 30-1) of Article 5 of the Law of the Republic of Kazakhstan dated July 9, 2004 , "On Electric Power Industry" (hereinafter -the Law) and shall determine the procedure for establishing protected zones of electrical networks and special conditions of using the lands, located in the boundaries of the zones.

The following concepts and definitions shall be used in these Rules:

1) electrical networks - a set of substations, distribution devices and connecting power lines, designed to transmit electric energy;

2) the protected zone of electrical networks - land, water and airspace, allotted to ensure the safety of electrical networks, shall create normal operating conditions, prevent their damage, as well as accidents among the people caught up in the protected zone of these networks.

Other concepts and definitions used in these Rules shall be applied in accordance with the Legislation of the Republic of Kazakhstan in the field of electricity.

3. These Rules shall apply to all existing, designing, being constructed and modernized electrical networks of the Republic of Kazakhstan, including national electrical networks, and shall be enforced on its territory by individuals and legal entities.

4. The protected zone of electrical networks shall be monitored by the organizations in charge of these networks through planned, periodic, as well as unscheduled inspections in the event of technological disruptions in the networks.

5. The protected zones of the electrical networks shall be established without the seizure of land from landowners and land users.

6. Individuals and legal entities, as well as branches and legal entities, shall be taking measures to ensure the safety and security of electrical networks, including those passing through their territory.

7. Disputes between the organizations in charge of the electrical networks, individuals and legal entities (their branches and offices) shall be resolved in accordance with the Law of the Republic of Kazakhstan.

## **Chapter 2. The order of establishing protected zones of electrical networks and special conditions of using the lands located in the boundaries of the zones**

### **Paragraph 1. The order of establishing protected zones of electrical networks**

8. In order to ensure the safety of the population, to create normal conditions for the operation of electrical networks and to prevent accidents, land shall be allotted and protected zones shall be established.

9. Minimum allowable distances from electrical networks to constructions, structures, as well as from power lines to earth and water surfaces shall be determined by Appendix 1 to these Rules and shall be observed in the design and construction of buildings and structures, while pruning and cutting down trees and shrubs.

10. Protected zones shall be installed along power lines (including branches to buildings) in the form of a piece of land and airspace bounded by vertical planes on either side of the projections of extreme wires to the surface of the earth (if their position shall not be flapped).

11. The protected zones of the electrical networks shall be established:

1) 2 meters (hereinafter - m) - for air lines with a bare wire voltage up to 1 kilovolt (hereinafter - kV);

2) 1 m - for self-carrying insulated wires with a voltage of up to 1 kV;

- 3) at least 10 m - for air transmission line 1 - 20 kV;
- 4) at least 15 m - for the 35 kV transmission line;
- 5) at least 20 m - for the 110 kV transmission line;
- 6) at least 25 m - for the air transmission line 220 kV;
- 7) at least 30 m - for the air transmission line 330 - 500 kV;
- 8) at least 55 m for the 1150 kV transmission line.

12. The protected zone along the transmission lines crossing through reservoirs (rivers, canals, lakes and others) shall be determined as airspace above the water surface of reservoirs, which shall be located on both sides of the extreme wires. For navigable bodies of water in the flapped position - at a distance of 100 m, for non-navigable bodies of water - at a distance provided for the establishment of protected zones along the air transmission lines passing overland.

13. A plot of land along underground power lines in the form of vertically bounded land on both sides of the line from extreme cables at a distance of 1 m, and for power cable lines with a voltage of up to 1 kV, 0.6 m in the direction of constructions and structures and 1 m towards the roadway.

14. Warning signs in the form of arrows in the direction of cable showing the distance to it shall be installed on the supports of power lines at intersections or junctions with underground communications cables or electric cables by organizations in charge of electric cables.

15. In accordance with the requirements of these Rules allotments, embodied in the protected zones of electrical networks shall not be used for agricultural work and seized from land users and landowners.

16. Field agricultural work, such as plowing, cleaning, hay removal, estuary watering, in the protected zones of the air transmission lines shall be carried out by land users with advance written notification of the organizations in charge of these lines shall be no later than 3 (three) calendar days before the start of these works.

17. When air and cable routes shall pass within rural and urban constructions, local executive authorities shall not allow the construction of protected zones for electrical networks.

18. Along the air transmission lines and along the perimeter of substations, distribution devices and switch points located in the forests of the State Forest Fund and green spaces within the settlement, the bared strips shall be laid in accordance with the Rules of the release of wood on the root and cutting of the forest at the State Forest Fund, approved by Order № 18-02/178 of the Acting Minister of Agriculture of the Republic of Kazakhstan dated February 27, 2015 (registered in the Register of State Registration of Regulatory Legal Acts, № 10679).

**Paragraph 2. The order of special conditions of using the land located in the boundaries of the zones**

19. When air transmission lines shall pass through the State Forest Fund pruning and cutting down trees growing in close proximity to the wires shall be carried out by state forest owners under a contract with the organizations in charge of these lines.

When air lines shall pass through parks, gardens and other perennial plantings, pruning and cutting of trees shall be carried out by organizations in charge of air transmission lines, and with mutual consent - organizations on the balance of which these plantings, or by citizens, owners of gardens and other perennial plantings, shall be in a manner defined by the organization in charge of power lines.

20. Within the protected zones of the electrical networks, without coordination with the organization in charge of these networks, it shall not be allowed to conduct construction, installation, earthworks, loading and unloading, search operations related to the device wells and sours, the arrangement of sites, parking of road transport, the placement of markets, buildings, structures, storage of materials, construction of fences, dumping and draining of caustic corrosive substances and fuel and lubricants.

21. Individuals and legal entities that shall have received written consent to conduct the above-mentioned work in the protected zones of electrical networks, perform them in accordance with the conditions that ensure the safety and security of these networks, at their own expense.

Written consent for the conduct of explosive works in the protected zones shall be issued after the organizations conducting these works shall have submitted the relevant documents under the Rules for the issuance of allowance for the conduct of explosive works, approved by Order № 350 of the Minister for Investment and Development of the Republic of Kazakhstan dated December 30, 2014 (registered in the Register of State Registration of Regulatory Legal Acts № 10273).

22. In the construction of irrigation and collection and drainage canals, the device of trellis for vineyards, gardens and other works, entrances and approaches to electric networks shall be preserved.

23. When joint suspension on the supports of power lines with a voltage of up to 1 kV of other lines belonging to different owners, each of the owners, repairing lines in which the other owner may be harmed or required the presence of its representative, shall pre-notify the owner of the interested owner for such repairs no later than 3 (three) calendar days.

24. Conducting work near air transmission lines using various mechanisms shall be carried out provided that air distances from the mechanism or its retractable part, also from the raised cargo in any position (including and at the greatest ascent or departure) to the nearest wire, which shall be under strain, meet the requirements of the Safety Regulations for the operation of electrical installations, approved by the order of the Minister of Energy of the

Republic of Kazakhstan dated March 31 2015 № 253 (registered in the Register of State Registration of Regulatory Legal № 10907).

25. The distance from a cable to the place of conducting of earthwork shall be determined in each separate case by the organization in charge of the cable power line, and it shall be specified in the written allowance.

26. In case of an emergency on the power lines in order to deal with their consequences, the organizations in charge of these lines shall be allowed to cut down certain trees in woodlands and in the forest strips adjacent to the routes of these lines, followed by the registration of documents for cutting in the order determined in the Rules of the release of wood at the root on the plots of the State Forest Fund, approved by the Order № 18-02/178 of the Acting Minister of Agriculture of the Republic of Kazakhstan, dated February 27, 2015 (registered in the Register of State Registration of Regulatory Legal Acts № 10679).

At the same time, the organizations in charge of these lines shall notify the forest owners about the emergency.

27. Organizations in charge of power lines shall have to excavate the ground in the protected zones of these lines, needed to repair and operate the transmission lines.

28. Planned repairs and reconstruction of agricultural transmission lines shall be carried out in consultation with land users and at a time when the land shall not be occupied by crops or to ensure the preservation of these crops.

The organizations in charge of the transmission lines shall notify the land users in written form about the planned terms for repairing and reconstruction of the transmission line three months before the planting shall start.

29. Work to prevent accidents and to deal with them on power lines can be carried out at any time of the year without the consent of land users and landowners, but with notification of the work being done.

30. After the emergency repair work, the organizations, in charge of the power lines, shall bring the land to a state suitable for their intended use, as well as reimburse land users damages caused in the conduct of the work. Land users' losses shall be determined and reimbursed by the parties.

31. Local executives shall provide information on the location of power lines to interested organizations.

32. Organizations that operate cable transmission lines shall be working to protect these lines from wandering currents.

33. Employees of electrical networks-operated organizations shall be given unhindered access to electrical network facilities located in other organizations in order to carry out the work-in-work allowance, for repair and maintenance work.

34. Fire service units shall start firefighting operations at constructions located in the protected zones of electrical networks after the employees of the organizations in charge of the electrical networks shall have cut off the power network.

35. Individuals and legal entities carrying out excavation work in the protected zone, when a cable not specified in the technical documentation for the production of the work shall be found, shall cease these works, shall take measures to ensure the safety and integrity of the cable and shall report this to the nearest energy-transmitting organization, which shall operate electrical networks, or to local executive bodies.

36. Individuals and legal entities in the protected zones of electrical networks shall comply with the requirements of the organizations in charge of the electrical networks, which shall be designed to ensure the safety of electrical networks and prevent accidents. If people's lives shall be threatened while working by individuals and legal entities in the protected zones of the electrical grids of the organization in charge of electrical networks, shall suspend work until the threat to people's lives shall be eliminated.

37. When violations of these Rules shall be detected, authorized officials of the organizations in charge of the electrical networks shall make an arbitrary act of infringement with the application of materials confirming the facts of the violation (photographs, explanatory, transmission line schemes, permits for work in the protected zone and other available materials), and shall take measures in accordance with the Law of the Republic of Kazakhstan.

38. The damage to electrical networks caused by individuals and legal entities shall be compensated in full at their expense by their agreed cost estimate for the organization's emergency recovery work, which shall be administered by the organization in charge of these lines.

39. The land areas allotted to substations, sectional and distribution points with higher voltages of 6 to 20 kV shall be no more than the values given in Table 1 of Appendix 2 of these Rules.

40. Land areas reserved for substations with various electrical connections (including complete) schemes with higher voltages of 35 to 1150 kV shall be set according to Table 2 of these Rules.

41. Land areas reserved for substations with buildings, structures (including the number of distribution cells) shall not correspond to the composition of the substation constructions, and structures shown in Table 2 of Appendix 2 shall be increased or shall be decreased by the values shown in Table 3 of Appendix 2 of these Rules.

Appendix 1  
to Rules for establishing  
protected zones  
of electrical networks  
and special conditions  
of using the lands located in the  
boundaries of the zones

**Minimum allowable distances from electrical networks to constructions, structures, as well as from overhead transmission lines to earth and water surfaces**

Minimum allowable distances from electrical networks:

1. To the nearest residential, industrial and non-production constructions and structures:

- 1) 2 m for VL 1-20 kV;
- 2) 4 m for VL 35-110 kV;
- 3) 6 m for VL 150-220 kV.

2. to the nearest protruding parts of non-production constructions, structures, production buildings, and facilities of electrical stations and substations:

- 1) 8 m for VL 330 kV;
- 2) 10 m for VL 500 kV.

3. to the nearest protruding parts of residential and public constructions, production constructions and structures (except electrical stations and substations):

- 1) 20 m for VL 330 kV;
- 2) 30 m for VL 500 kV.

Note.

Power lines shall not be allowed to pass through stadiums, educational and children's institutions.

It shall be allowed for air transmission lines up to 20 kV to take the distance from the extreme wires to the boundaries of homestead land, individual houses and collective garden plots of at least 20 m.

Passage of power lines over buildings and structures shall not be allowed.

It shall be allowed to pass air transmission lines over the production constructions and structures of industrial plants I-II degree of fire resistance in accordance with building Regulations and Rules on fire safety of constructions and structures with roofing of non-combustible materials (for VL 330-750 kV only over the production buildings of electrical substations).

For air transmission lines, fire-fighting distances from liquefied hydrocarbon gas tanks to facilities both within and outside the warehouse and from liquefied hydrocarbon gas storage tanks, part of the commodity and raw materials base to other facilities, shall be at least 1.5 m of the height of the support.

Appendix 1  
to Rules for establishing  
protected zones  
of electrical networks  
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boundaries of the zones

## Allotted areas for substations

Table 1

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Substations, distribution and partitioning points	Areas of allotted land, m <sup>2</sup>
Complete substations 20/10/4 kV with one transformer with a capacity of up to 630 kVA	30,0
Complex substations 20/10/4 kV with two transformers with a capacity of 630 kVA	80,0
Mast substations with one transformer with a capacity of 250 kVA	40,0
The same with two transformers with a capacity of 250 kVA	60,0
Section points	60,0
Closed distribution points	80,0
Closed-type substations with one or two transformers with a capacity of up to 630 kVA	150,0

Note. The area of allotted land for a closed substation with transformers with a capacity of more than 630 kVA shall be determined by the project.

Table 2

Substation electrical connections schemes	The area of the allotted land, thousand m <sup>2</sup> , installed at the transformer substation						
	Two winding, voltage m kV			Three winding, voltage kV			
	35	110	220	110	220	500/220/6-10	1150/500
1	2	3	4	5	6	7	8
1. Block line - transformer of the tire with a lower voltage of 6-20 kV	1,4	2,8	6	-	-	-	
Block line - tire transformer with 5 cells of average voltage 35 kV	-	-	-	3,5	-	-	-
Block line - tire transformer with 10 cells of average voltage 35 kV or 6 cells 110 kV	-	-	-	-	3,0	-	-
2. Enlarged block (line - 2 transformers ) or twin block (2	3,0	4,0	14	-	-		-

lines - 2 transformers ) with lower voltage 6-20 kV -						-	
Larger block (line - 2 transformers ) or twin block (2 lines - 2 transformers ) with 10 cells of average voltage 35 kV	-	-	-	9,3	-	-	-
Larger block (line - 2 transformers ) or twin block (2 lines - 2 transformers ) with 12 cells of average voltage 110 kV	-	-	-	-	3,4	-	-
3. small bridges or 2 blocks with an additional line with a lower voltage of 6- 20 kV	3,0	6	20	-	-	-	-
Small bridges or 2 blocks with an additional line with 10 cells of average voltage 35 kV4.	-	-	-	-	36	-	-
4 . Four-corner (including extended) with lower voltage of 6- 20 kV	-	-	35	-	-	-	-

The quadrangle (including extended) with 7 cells of average voltage 110 kV	-	-	-	-	50,0	-	-
5. With prefabricated tires with 7 cells of higher voltage, with a lower voltage of 6-20 kV	6	16	40	-	-	-	-
With prefabricated tires with 7 cells of higher voltage and 8 cells of average voltage 35 kV	-	-	-	26	-	-	-
With prefabricated tires with 13 cells of higher voltage and 17 cells of average voltage 110 kV	-	-	-	-	50	-	-
6. Block line - transformer with 6 cells on average voltage	-	-	-	-	26	-	-
7 . Quadrangle with 12 cells on average voltage	-	-	-	-	60	-	-
8. With a half-time high voltage attachment with 14 cells							

with two medium voltages: 16 cells 220 and 20 cells 110 kV, two groups of single-phase autotransformers and two synchronized compensators	-	-	-	-	-	120	-
9 . Transformer - tires with 10 cells at the highest and 15 on average voltage, two groups of single-phase autotransformers and two synchronized compensators	-	-	-	-	-	160	500

Notes:

1. The land areas shown in the table shall take into account the placement on the substation of one or two transformers of the common substation control point, open distribution devices of higher (and medium) voltage, closed or complete lower voltage distribution device

2. The land areas allotted for the substation, provided by paragraphs 1, 2 and 3 in columns 2, 3 and 4 shall not be taken into account the area of premises for permanent service personnel;

3. Substation areas shall include the withdrawal of power lines in opposite directions, open distribution devices, and open installations of transformers. In the cases outlined below, the values shall be multiplied by the following index number:

- 1) when the lines of higher and medium voltages shall be drawn in one direction - 1.15;
- 2) when the lines of higher and medium voltages shall be drawn in one direction at an angle of 90 degrees - 1.10;
- 3) in closed distribution devices of higher and medium voltages - 0.6;
- 4) when transformers shall be closed - 0.9;

4. In case if more than two transformers or a ground-removal circuit shall be installed in substations, the allotted land area shall be determined by the project.

Table 3

Structures and constructions of substations	Allotted land areas, m2
Utility space for service personnel	300
Portal for auditing transformers 35 and 110 kV	300
35 kV open distribution cell	300
Hardware oil farms	300
High-pressure pumping station with tanks and pipelines	500
Closed distribution device	500
6-20 kV 6-20 kV complete distribution device	500
110 kV open distribution cell	1000
Installation with two synchronous compensators for 15 thousand. kV Ar	1500
Open oil warehouse	1500
150 and 220 kV open distribution cell	1500
Installation with two synchronous compensators of 50 or 100 thousand. kV Ar	3000
Tower for transformer revision	3000
Batteries for static capacitor	3000
330 kV open distribution cell	3000
Splashing pool	8000
500 kV open distribution cell	8000
1150 kV open distribution cell	26000

Note. The allotted land areas for constructions and structures not specified in the table shall be determined by the project.