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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

HJ 24-2020

Replacing HJ 24-2014

**Technical Guidelines for Environmental Impact Assessment
(English Translation)**

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1 Scope of application

This standard specifies the content and methods of environmental impact assessment of power transmission and transformation projects.

This standard applies to AC transmission and transformation construction projects with voltage levels of 110kV and above, and DC transmission with voltage levels of $\pm 100\text{kV}$ and above.

Environmental impact assessment of construction projects.

2 Normative references

The content of this standard refers to the terms in the following documents. For undated reference documents, their valid versions are applicable to this standard.

GB 3096 Acoustic Environmental Quality Standard GB 8702 Electromagnetic environment control limit GB 12348 Environmental Noise Emission Standard at the Boundary of Industrial Enterprises GB 39220 HVDC project synthetic electric field limit and its monitoring method HJ 2.1 General outline of technical guidelines for environmental impact assessment of construction projects HJ 2.3 Technical Guidelines for Environmental Impact Assessment Surface Water Environment HJ 2.4 Technical Guidelines for Environmental Impact Assessment Acoustic Environment HJ 19 Technical Guidelines for Environmental Impact Assessment Ecological Impact HJ 681 Electromagnetic environment monitoring method for AC transmission and transformation engineering (trial implementation) HJ 1113 Technical requirements for environmental protection of power transmission and transformation construction projects

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 Electric power transmission and distribution construction project

A construction project that transforms the characteristics of electrical energy (mainly voltage and current) and transmits it from the power supply location to the power demand location.

The power transmission and transformation construction projects mentioned in this standard can be divided into AC transmission and transformation construction projects and DC transmission construction projects.

Design projects include transmission lines and substations (or switch stations, series compensation stations), and DC transmission construction projects include transmission lines, converter stations and grounding ???.

3.2 Transmission line

A facility composed of wires, insulating materials, poles and towers used to transmit electricity between two points in a power system, usually in the form of overhead transmission lines, electricity Cable lines, gas insulated metal enclosed transmission lines.

3.3 Substation

A part of the power system whose function is to change the voltage level, collect and distribute electric energy, mainly including transformers, busbars, and line switch devices.

Equipment required for the safety and control of equipment, buildings and power systems.

3.4 Switching substation

A substation with switchgear, usually including busbars, but without a main transformer.

3.5 Series compensator station

Power facilities that realize series compensation of power system transmission lines. A complete set of series compensation devices and related auxiliary facilities and buildings are installed in the station Objects, structures.

3.6 Converter substation

A transformer substation installed with an inverter and mainly used to convert AC to DC or DC to AC. Generally installed in one location One or more converters, and corresponding buildings, transformers, reactors, filters, reactive power compensation equipment, control, monitoring, protection, Composition of measuring equipment and auxiliary equipment.

3.7 Earth electrode system

In HVDC power transmission construction projects, special designs and constructions are designed and constructed for the purpose of realizing normal operation or fault operation with earth or seawater as the current loop.

The general term for a set of devices manufactured. It is mainly composed of a ground electrode circuit, a ground electrode feeder line and a ground electrode.

3.8 Electromagnetic environment-sensitive target

Objects that need to be focused on in the electromagnetic environment impact assessment and monitoring. Including residential buildings, schools, hospitals, office buildings, factories, etc.

Work or study building.

3.9 Power frequency electric field

The electric field produced by a charge that changes periodically over time at 50 Hz. The physical quantity that measures the power frequency electric field strength is the electric field strength, and its unit is volts Special per meter (V/m), kilovolts per meter (kV/m)

commonly used in engineering.

3.10 Power frequency magnetic field

A magnetic field generated by a current that changes periodically over time at 50 Hz. The physical quantity that measures the strength of the power frequency magnetic field can be either magnetic induction or in order to use the magnetic field strength, their units are Tesla (T) and ampere per meter (A/m). In engineering, the unit of magnetic induction intensity is usually microtesla.

Sl_a (μT).

3.11 Total electric field

The electric field generated by the electric field generated by the charge on the direct current charged conductor and the electric field generated by the space charge caused by the conductor corona. Metric composite electricity the physical quantity of field strength is electric field strength, and its unit is volts per meter (V/m), and kilovolts per meter (kV/m) is commonly used in engineering.

3.12 Nominal electric field

The electric field generated by the charge on the DC charged conductor (not including the electric field formed by the space charge). The physical quantity measuring the nominal electric field strength is electricity Field intensity, its unit is volts per meter (V/m), and kilovolts per meter (kV/m) is commonly used in engineering.

3.13 Environmental protection facilities

Refers to the installations, equipment, and engineering facilities required for the prevention and control of environmental pollution and ecological damage and environmental monitoring.

3.14 Environmental protection measures

Refers to management or technical measures taken to protect the environment to prevent or reduce adverse effects on the environment.

4.1 Working procedures

The environmental impact assessment work of power transmission and transformation construction projects is generally divided into three stages. investigation and analysis and work plan stage, analysis and demonstration and prediction Evaluation stage and preparation stage of environmental impact assessment documents. Work procedures for environmental impact assessment of power transmission and transformation construction